

ORIGINAL
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Title: **BRIEFING ON THE EVALUATION OF THE
REQUIREMENTS FOR LICENSEE TO UPDATE
THEIR INSERVICE INSPECTION AND INSERVICE
TESTING PROGRAM EVERY 120 MONTHS -
Public Meeting**

Location: **Rockville, Maryland**

Date: **Friday, March 24, 2000**

Pages: **1 - 95**

ANN RILEY & ASSOCIATES, LTD.
1025 Connecticut Avenue, N.W., Suite 1014
Washington, D.C. 20036
(202) 293-3950

DF03

DISCLAIMER

This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission held on March 24, 2000, in the Commission's office at One White Flint North, Rockville, Maryland. The meeting was open to public attendance and observation. This transcript has not been reviewed, corrected or edited, and it may contain inaccuracies.

The transcript is intended solely for general informational purposes. As provided by 10 CFR 9.103, it is not part of the formal or informal record of decision of the matters discussed. Expressions of opinion in this transcript do not necessarily reflect final determination or beliefs. No pleading or other paper may be filed with the Commission in any proceeding as the result of, or addressed to, any statement or argument contained herein, except as the Commission may authorize.

1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION
3 OFFICE OF THE SECRETARY

4 ***

5 BRIEFING ON EVALUATION OF THE REQUIREMENT
6 FOR LICENSEE TO UPDATE THEIR INSERVICE
7 INSPECTION AND INSERVICE TESTING PROGRAM
8 EVERY 120 MONTHS

9 ***

10 PUBLIC MEETING

11 Nuclear Regulatory Commission
12 One White Flint North
13 Building 1, Room 1F-16
14 11555 Rockville Pike
15 Rockville, Maryland
16 Friday, March 24, 2000

17 The Commission met in open session, pursuant to
18 notice, at 9:30 a.m., the Honorable RICHARD A. MESERVE,
19 Chairman of the Commission, presiding.

20 COMMISSIONERS PRESENT:

21 RICHARD A. MESERVE, Chairman of the Commission
22 GRETA J. DICUS, Member of the Commission
23 NILS J. DIAZ, Member of the Commission
24 EDWARD MCGAFFIGAN, JR., Member of the Commission
25 JEFFREY S. MERRIFIELD, Member of the Commission

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

1 STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

2 KAREN D. CYR, General Counsel

3 ANNETTE L. VIETTI-COOK, Secretary

4 JAMES A. PERRY

5 RALPH BEEDLE

6 WILLIAM SHACK

7 BRIAN SHERON

8 FRANK MIRAGLIA

9 JACK STROSNIDER

10 THOMAS SCARBROUGH

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

P R O C E E D I N G S

[9:30 a.m.]

CHAIRMAN MESERVE: Good morning.

Today the Commission will be briefed by staff, ACRS, and industry representatives on the requirement for licensees to update their in-service inspection and in-service testing program.

That's the ISI and IST programs.

Current regulations require licensees to update these programs every 10 years to the latest edition of the American Society of Mechanical Engineers' boiler and pressure vessel code, as incorporated by reference in 10 CFR 50.55(a).

The staff has proposed, in a paper currently before the Commission, to eliminate the update requirement. In addition, staff recommends that ISI and IST requirements be baselined to the 1995 edition of the ASME code, with the 1996 addenda.

Thereafter, program updates to a later edition of the ASME code would be voluntary on the part of licensees, unless the staff establishes new baseline requirements in accordance with 10 CFR 50.109, which, of course, is our backfit rule.

We have two panels today.

The staff will be in the second panel, and I'd

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

1 like to introduce now our first panel.

2 They are Mr. Ralph Beedle, Senior Vice President
3 and Chief Nuclear Office of the Nuclear Energy Institute;
4 Mr. James Perry, Past Vice President of Nuclear Codes and
5 Standards, who is here representing the ASME; and Dr.
6 William Shack of the ACRS.

7 We very much welcome you here this morning.

8 The Commission specifically appreciates the
9 opportunity to have a question-and-answer interaction with
10 the panelists, so that we'd ask that you be careful to abide
11 by the time on your prepared statements.

12 Let me turn to my colleagues to see if they have
13 any opening statements, and if not, why don't we proceed?

14 Mr. Beedle?

15 MR. BEEDLE: Thank you, Mr. Chairman,
16 Commissioners. Good morning.

17 I would like to address two points today:

18 One, some comments concerning standards
19 development and then, second, some specific comments
20 concerning the proposed rule-making.

21 If I may have the next slide -- in fact, we can go
22 to slide three.

23 Standard development organizations have made a
24 positive contribution over the years to providing the
25 industry with codes, standards, and guides for the design,

1 construction, testing, and inspection of our systems.

2 The fundamental purpose of the standards is to
3 recognize sound engineering practice and framework for the
4 application of state-of-the-art technologies such as
5 instrument -- digital instrumentation and control, fiber
6 optics technology, eddy current testing, and so forth.

7 The consensus process and the balance of interest
8 fundamentals to all standard development must be sustained,
9 with continued participation by the user community -- that
10 is, the manufacturers, consultants, architect engineering
11 firms, utilities, and the Federal agencies.

12 As technological advancements are made, the user
13 community will demand the development of new and revised
14 codes and standards, and the extent of user community
15 participation in future codes and standards will certainly
16 develop as a result of practical need and economic value of
17 future codes.

18 Next slide, please.

19 If we could go to slide four?

20 The National Technology Transfer and Advancement
21 Act and the associated OMB circular enables Federal agencies
22 to use technical standards developed by industry consensus
23 standards organizations, with an intent to encourage Federal
24 agencies to benefit from the private sector, to promote
25 Federal agency participation, and to reduce the reliance on

1 Government-unique standards.

2 The NRC involvement and industry participation in
3 standards development has been extensive, and it is clear
4 that the NRC has benefitted from this effort.

5 Go to the next slide.

6 According to the NRC's annual report to the OMB,
7 staff has participated -- there have been 145 staff members
8 participating in some 18 standard development organizations
9 involving 260 writing committees, and as a result, seven
10 standards were incorporated by reference in 50.55(a), 30
11 were adopted in six regulatory guides, and eight were
12 adopted in a single reg guide.

13 Overall the NRC has endorsed some 4,000 codes and
14 standards within the regulatory framework.

15 According to the SECY 99-029, there have been
16 approximately 20 such consensus standards mandated through
17 rule-making, and hundreds of consensus standards have been
18 endorsed for voluntary implementation throughout the reg
19 guide and NUREG process.

20 It is not surprising that the extensive
21 utilization of these codes and standards and associated
22 changes, plus the endorsement process have resulted in some
23 delays and some confusion as we go about this process, but
24 nonetheless, it has overall been a successful process.

25 I would suggest that this particular rule-making

1 is one that has suffered from the time delays in that we
2 have been working on this since about 1991, and we're
3 hopeful that, as a result of this meeting today, we'll
4 finally see some conclusion to that.

5 Next slide, please.

6 Let me now turn to the proposed rule-making.

7 In SECY 00-11, it discusses several options
8 concerning voluntary updates of various additions to the
9 ASME boiler code.

10 The NRC staff has acknowledged that each of the
11 options discussed in the SECY paper provide an acceptable
12 level of safety, and the industry agrees with the NRC's
13 staff evaluation in that regard.

14 The staff also concludes that the code changes
15 that are associated with these options are not justified
16 when compared to cost implementation imposed on the
17 licensees, and we concur with the staff assessment in that
18 regard, as well.

19 Next slide, please.

20 The question of cost-benefit and demonstrated
21 safety improvement with regard to 50.55(a) has been a
22 longstanding issue within the industry and the NRC, and this
23 is one of the fundamental issues that we hope to address
24 today and reach some consensus based on the decision of the
25 Commissioners.

1 The NRC and the industry have been involved in
2 rule-making since 1991 and in '93, when Entergy Corporation
3 submitted a cost-beneficial rule-making that would suspend
4 the periodic update of the ISI/IST requirements, or the
5 10-year ISI.

6 We continue to believe that these recommendations
7 that the staff has proposed represent sound regulatory
8 policy and are consistent with the Commission's stated
9 performance goals.

10 Next slide, please.

11 In the SECY before you, the staff has recommended
12 option 1B, and while we agree that the option 1B would be an
13 improvement, we would like to see the basis for that
14 actually be the 1A, in which we would go back to the 1989
15 code, although we recognize the problems associated with
16 that.

17 The fundamental industry position is that we would
18 like to see the requirement for the 10-year ISI suspended
19 and that any future revisions to the code be implemented
20 through the backfit rule process evaluated by the staff and
21 the industry on the basis of cost-beneficial analysis.

22 So, with that, Mr. Chairman, I would conclude my
23 remarks and await questions at the end of the panel.

24 CHAIRMAN MESERVE: Why don't we complete the
25 statements, and then we'll turn to questions.

1 Mr. Perry.

2 MR. PERRY: Good morning, Commissioners.

3 On behalf of ASME, we wish to thank you for the
4 opportunity to brief you on our evaluation of the
5 requirements for licensees to update their in-service
6 inspection and test programs.

7 In our view, the current update requirements
8 should be maintained.

9 ASME codes are first and foremost safety codes.
10 They are intended to protect the health and safety of the
11 public by maintaining pressure boundary integrity and
12 operational readiness of the mechanical equipment. Since
13 the proposed change to the regulation is based on burden
14 reduction, I will address that specific aspect.

15 Next slide, please.

16 Benefits outweighing the cost: This relates to
17 Commission performance goal dealing with reduced unnecessary
18 regulatory burden.

19 The benefits of updating the in-service inspection
20 test programs outweigh the cost.

21 The process of updating the programs focuses on an
22 evaluation of the entire program. It allows you to identify
23 deficiencies and also serves as a basis for making
24 corrections and enhancements.

25 The update provides for standardization and

1 consistency of requirements.

2 This will be lost if the 120-month update is not
3 required in the future.

4 Now, using the ISI program as an example based on
5 informal feedback from seven utilities, they estimate the
6 average cost of updating to be about \$200,000, or roughly
7 \$20,000 for each year of the 10-year interval between
8 updates.

9 Likewise, the O&M code costs are estimated at
10 about 125,000.

11 I think these are consistent with what the staff
12 reported on the proposed regulation change.

13 Now, it's important to note that, of this cost,
14 the NRC mandated one-time cost to add containment
15 inspection, IWE/IWL provisions, plus the addition of
16 Appendix VIII on performance demonstration for ultrasonics,
17 adds significantly to these totals.

18 So, they are mandated, according to the original
19 proposal.

20 In addition, there are costs that will be incurred
21 as review fees for exemptions and relief requests needed to
22 use costs or rules from later editions of the code.

23 For example, typical cost for a relief request
24 backed by ASME code cases ranges from 10 to 15 thousand per
25 request.

1 The cost of relief requests not supported by code
2 cases can range anywhere from 50,000 to a half-million
3 dollars, depending on the complexity of the issue.

4 It is a certainty that, if this proposal is
5 approved, relief requests will dramatically increase,
6 causing an increased burden not only on utilities but the
7 NRC staff, and I think it would be counterproductive.

8 Now, in my view, if I were a utility executive
9 still -- I was one at a utility as a vice president.

10 If I were at a utility and someone were to ask me,
11 if you could save the cost of this update, you know,
12 recognizing the current environment, and it wasn't mandated,
13 would you be for it?

14 Absolutely, I would be for it, but that's a
15 short-term objective, I submit, and I think that we need to
16 be looking at the difference between a short-term focus,
17 which is one what is the administrative costs of making the
18 update, versus the long-term focus, which should be what's
19 the net benefits gained in implementing this over the
20 balance of life of the plant, and I submit that many of
21 these changes reduce the cost significantly over going to
22 the old version of the code.

23 Next chart, please.

24 Now, the ASME codes are really living documents,
25 and this subject relates to the Commission performance goal

1 of maintaining safety.

2 They are living documents because they incorporate
3 new and improved methodologies in inspection, testing,
4 design, and materials.

5 They also reflect lessons learned from hundreds of
6 cumulative years of nuclear reactor operating experience.
7 The original code was based -- was very conservative, based
8 on fossil plants, non-nuclear.

9 We've learned a lot since then.

10 In addition, the ASME codes are now moving from
11 the traditional, prescribed repetitive inspections and tests
12 to more risk-informed, performance-based
13 condition-monitoring approaches, and these rank high on the
14 Commission's priorities in terms of risk-informed, for
15 example, as well as ASME's.

16 I'd also like to point out that ASME has responded
17 to requests directly from the NRC on issues important to
18 safety.

19 For example, the old comprehensive pump test is
20 one that originally the Commission asked for and is now
21 included in the O&M code.

22 Another one has to do with the probabilistic risk
23 assessment standard.

24 That's been a very high priority, and we're making
25 good progress on that, and I think that ties directly in

1 line with the direction the NRC Commissioners and staff
2 members are moving toward.

3 Next chart, please.

4 Summary of the changes to the codes from '89 to
5 '99: This, again, relates to maintaining safety.

6 This chart summarizes a number of ASME changes
7 from 1989 to 1999 by change category for the boiler pressure
8 vessel code section 11 dealing with in-service inspection
9 and the operation and maintenance code dealing with the
10 in-service testing.

11 A copy of the description of the actual changes,
12 the proposed purpose, benefits, and classification of the
13 changes has been provided to you as part of our back-up
14 information package.

15 You will note that there are 15 IS's, improved
16 safety, and 29 RRE, reduction in radiation exposure changes.
17 These reflect operational experience to assure safety and
18 ALARA considerations, and incidentally, I consider the
19 reductions in radiation exposure to be safety-related,
20 because obviously we're interested in ALARA, keeping them as
21 low as possible.

22 That also translates into dollar savings, because
23 each man-rem of exposure that's avoided saves approximately
24 \$10,000, I think is one norm that I've seen used.

25 Now, these individual and subtle changes that

1 improve safety and reduce radiation exposure have cumulative
2 significant beneficial effect that can't be overlooked.

3 Now, many of the changes that we classify as
4 improved industry standards and reduced radiation
5 requirements relate to reductions in examinations and tests
6 and new methods for repair and flaw analysis.

7 Many of the maintenance-classified changes reflect
8 feedback from inquiries, clarification of requirements, or
9 administrative-type changes.

10 So, for an average layman, looking at the code is
11 very complicated, but if you look at it, you say, well,
12 these are just minor changes, word changes.

13 But I can submit to you, gentlemen and ladies,
14 that being on the codes and standards committees for over 17
15 years and seeing how they process these and what they have
16 to go through for consensus, they all have a valid basis of
17 justification to make the change and have to go through the
18 consensus process before they're actually issued.

19 Next chart, please.

20 ASME consensus process and use of volunteers:
21 This subject relates to Commission performance goal of
22 increasing public confidence, because we use an open system,
23 all the meetings are open, the information is available to
24 everybody, and we encourage it, and changes that are being
25 proposed still have to go through a review cycle, public

1 review, just the same as the NRC regulations by the ANSI
2 process.

3 But ASME's ANSI-approved procedures require a
4 broad-based balanced group of volunteer experts to serve on
5 the codes and standards committees that produce approved
6 code changes and code cases.

7 The members include approximately 30-percent
8 utilities, 30-percent consultants, and the remaining 40
9 percent include balance of interest categories that include
10 regulators, enforcement agencies, manufacturers, and
11 insurance company inspection agencies.

12 Now, by procedure, there cannot be anymore than
13 one-third of the total membership from any one category of
14 interest, and that's how we keep it balanced. I think it's
15 served us well.

16 The collective effort of all of the volunteers
17 working together on ASME committees, the subcommittees, the
18 subgroups, and work groups to update the codes provide what
19 I call a multiplier effect in direct support of the
20 120-month update.

21 In other words, we're using these collective
22 resources of all of these volunteers toward a common purpose
23 and objective related to the 120-month update.

24 This is considered, in my view, superior to the
25 individual effort of any single category of interest group,

1 such as an owners group, or even NEI, from that point. You
2 don't have the broad cross-section of all the participants,
3 including NRC participating.

4 The consensus process is required to be used by
5 each of the ASME codes and standards committee, and it
6 requires that all views and objections be considered, that
7 an effort be made toward the resolution.

8 Now, there has been strong feedback from our
9 volunteer members on the ASME committees that their travel
10 and participation will be cut back in the event the current
11 code becomes voluntary.

12 I think it makes sense. Many utilities and
13 manufacturers are struggling to try to reduce cost, and if
14 this is only going to be voluntary, then the benefits may
15 not be there, so they may choose not to contribute, and I
16 think the same thing may be true with the NRC, based on your
17 reductions in force and so forth.

18 Now, this will make it more difficult for ASME to
19 respond to the critical issues affecting safety, such as
20 aging and degradation of components.

21 Next chart, please.

22 Negative impact of deleting the update
23 requirements: This relates to the Commission performance
24 goal of making NRC activities and decisions more or less
25 effective, efficient, and realistic.

1 In my view, this one makes it less.

2 If the future changes to the ASME code become
3 voluntary, then the impact on the changes to a range of code
4 additions and addenda applied by licensees is expected to be
5 great.

6 This will have a negative impact due to
7 inconsistent implementation -- in my view, cherry-picking,
8 where you selectively pick what you want and don't apply the
9 others -- and incidentally, I said the code is fairly
10 complex, and unless someone is very familiar and
11 knowledgeable, there is an opportunity for selecting
12 something and not taking all the other pieces that go with
13 it, so creating additional errors.

14 Also, there would be lack of uniformity and
15 consistency in verifying conformity.

16 It's unlikely that the entire additions or addenda
17 will be implemented. Thus, numerous relief requests will be
18 needed to be handled by the NRC staff, increasing their
19 workload.

20 By deleting the update requirements and making
21 future code additions and addenda voluntary, my personal
22 prediction is that the NRC will place less, nor more,
23 emphasis and apply a lower priority to NRC representatives
24 participating in code committee activities and timely
25 endorsement of these revised codes, and I cite the NQA

1 activities as one.

2 We've tried to work with the staff to try to get
3 them to endorse the later codes, and they talk about
4 problems with budgets and so forth.

5 Unless there's a big groundswell, they're not
6 going to do it, and there is one where it's not mandatory
7 but it's recommended.

8 Currently, the regulation lags four years behind
9 the current code, and many code cases still have not yet
10 been included in the latest regulatory guides, and I cite as
11 an example -- there's a letter that ASME sent to the NRC
12 back in July 1997 identifying some 31 approved code cases
13 related to in-service inspection that were not picked up in
14 the proposed Revision 12 to Reg. Guide 1.147, and I submit
15 to you many of those are very significant.

16 One of them on code case 560 alone could save the
17 industry millions of dollars having to do with D.J. Wells
18 and reductions using more advanced techniques.

19 And so, as these are delayed, I think the impact
20 on the staff is greater and on the industry is greater,
21 because you have to go in and get specific approval requests
22 and exemptions in order to allow you to use these.

23 Finally, last chart, in conclusion, by keeping the
24 120-month update, we maintain the stable system which works
25 to provide an integrated approach to safety improvement and

1 burden reduction.

2 Maintain the update process. It works well. Use
3 option 2.

4 Thank you very much for allowing us to present our
5 case to you, and thank you for your kind attention.

6 CHAIRMAN MESERVE: Thank you.

7 Mr. Shack?

8 DR. SHACK: Okay.

9 The ACRS also strongly recommends that we retain
10 the 120-month update requirement, the option 2 requirement.

11 In this case -- you know, the ACRS occasionally
12 has different opinions.

13 I think this is not merely a consensus view of the
14 ACRS.

15 This is a unanimous view of all the members.
16 Those with utility backgrounds, I believe, are particularly
17 supportive.

18 We might only sort of vary in our degrees of
19 adamancy.

20 Many of the arguments related to dropping the
21 update are related to the maturity of the inspection
22 process. We just don't see it.

23 When we look at what's being proposed, there have
24 been very significant changes in the last 120-month update
25 period.

1 The staff recognizes that in their recommendation
2 to especially include the performance demonstration for the
3 ultrasonic testing, which I think is a particular
4 significant update since the 1989 edition.

5 We believe that there will continue to be
6 important changes as we go to risk-informed inspection, as
7 we develop new technology.

8 Some of these inspections may, in fact, eliminate
9 inspections.

10 As the ASME has noted, reducing unwarranted
11 exposures is also a contribution to safety.

12 We believe these inspections are an important part
13 of the aging management programs that we have for license
14 renewal and that because the ASME provides essentially a
15 peer review of these inspection requirements, as the ASME
16 representative noted, an extremely broad-based group, we
17 think it increases the stakeholders' confidence in the
18 effectiveness of the inspections, and that's important for
19 building confidence in the whole license renewal process.

20 The basic justification for dropping the update
21 requirement is a cost one, that it's just not warranted.

22 We've seen conflicting evidence or estimates of
23 the cost in the presentations to the ACRS. We haven't found
24 any of them particular definitive.

25 Our conclusion is that the net costs either way,

1 whether they're a decrease or an increase, are fairly
2 modest, and so, I think there's not a strong cost case to be
3 made for dropping the update.

4 The other part of the process that particular
5 concerns us is the notion that our defense-in-depth
6 requirements really should be subjected to the backfit
7 analyses, and again, while we all agree on the update, we
8 have a variety of opinions on defense-in-depth.

9 But again, if you look at defense-in-depth as part
10 of the engineering approach when used to achieve low-risk,
11 you can evaluate the effectiveness of that process by PRA,
12 and you can do cost-benefit analyses of additional design
13 changes to do that.

14 ISI and the update process, however, really don't
15 follow from that design application of defense-in-depth;
16 they follow from the structuralist approach, that even
17 though our engineering has reduced the risk to acceptable
18 levels, we believe that the integrity of these systems is so
19 important that defense-in-depth measurements, like ISI and
20 the update, are justified in this argument that, just in
21 case we are wrong, just in case there's something we've
22 missed, that although we believe the systems have been
23 designed for low-risk.

24 Single-failure criterion, pipe risks are low risk,
25 but we believe that additional defense-in-depth measures

1 like an effective in-service inspection program are an
2 important element in that defense-in-depth approach, and the
3 update process is an important part of the inspection --
4 ensuring the effectiveness of the inspection approach.

5 And that concludes my remarks.

6 CHAIRMAN MESERVE: I'd like to thank you all very
7 much.

8 Mr. Perry, could you say something about how the
9 ASME updates are applied outside of the nuclear context? I
10 mean are non-nuclear boilers, for example, typically
11 required by states to update?

12 MR. PERRY: I think one of the conflicts that we
13 see, if you eliminated this, is that many states that
14 mandate ASME codes require them to be done to the latest
15 ASME code requirement, so they are kept current with the
16 latest one, and this would just make that disparity further
17 and further apart.

18 So, it makes it difficult for the people who are
19 trying to enforce it to try to justify the difference
20 between a state requirement and a Federal requirement,
21 such as section 3, you know, manufacturers who are building
22 components to the code.

23 CHAIRMAN MESERVE: Do I understand you to suggest
24 that, overtime, then, we would have non-nuclear plants that
25 were forced to comply with more modern codes than nuclear

1 plants?

2 MR. PERRY: Right.

3 CHAIRMAN MESERVE: Could you say something about
4 how the ASME considers costs, whether it considers cost, as
5 it evaluates the update process?

6 MR. PERRY: Yes.

7 The code being a safety code, of paramount
8 importance is those measures that protect the health and
9 safety of the public. That's paramount, but a secondary
10 criteria has to do with what's it going to cost to implement
11 it?

12 So, I'll use an example of what section 11 has
13 been doing over the last several years.

14 They have many, many changes that are being
15 considered, and so, to try to get them on their agenda, they
16 prioritize them, and they prioritize them related to --
17 basically related to a safety enhancement or a burden
18 reduction or maintenance-type item, and then they further
19 subdivide it as to high rating of priority or low priority
20 within each of those.

21 So, as they're reviewed and evaluated, there's
22 generally a white paper that goes with it, particularly the
23 more complex ones, that explains what the purpose of this is
24 and what the advantages are.

25 Now, they don't do a finite cost-benefit analysis,

1 but I can tell you for a fact that the people who sit on the
2 committees, particularly the ones that have to be -- that
3 are going to be implementing it, are very conscious of
4 what's it going to cost to implement this change and is it
5 beneficial or not?

6 So, there is a balance between enhancing the
7 health and safety and maintaining costs, and I think they've
8 become -- I think the ASME committees have become more
9 sensitive to this over the last probably five to 10 years
10 based on the direction industry is going and what it costs
11 to maintain competitiveness.

12 CHAIRMAN MESERVE: Mr. Beedle, I noticed that, in
13 your comments, you didn't mention cost, but there is -- as I
14 looked through the materials, and I think as Dr. Shack had
15 indicated, there is a range of estimates of costs, I think
16 on the low side are on the order of 200,000 up to as much as
17 1.5 million a year.

18 Can you comment?

19 Is there any reliable information as to what these
20 updates really cost?

21 MR. BEEDLE: The information we've gotten from the
22 utilities would indicate that that's probably a reasonable
23 range, you know, one-and-a-half million down to maybe
24 half-a-million dollars, aggregate somewhere on the order of
25 55 to 155 million dollars throughout the industry.

1 So, it's not an insignificant amount of money on
2 that.

3 I don't believe we're talking about abandoning the
4 code development process that ASME has.

5 I think we're really focused on the ISI/IST
6 requirements for the nuclear plant and to update those on a
7 10-year interval, and so, if the impression is that, by not
8 having that requirement, that the nuclear plants are less
9 safe in the operation compared to the non-nuclear facilities
10 in this country, I don't think that's the case at all.
11 These plants were built to the code.

12 When ASME updates some of the code, we don't go
13 back and re-do all of those pressure vessels that we have.
14 We built them to the code at the time they were constructed,
15 and if we build a new plant, even if there was no 10-year
16 ISI update requirement, we would build them to the code as
17 it stands today.

18 So, I don't think we're talking about the whole
19 plant.

20 CHAIRMAN MESERVE: I understand that.

21 MR. BEEDLE: So, I want to make sure we don't get
22 diverted on that one.

23 CHAIRMAN MESERVE: Mr. Perry, you wanted to say
24 something?

25 MR. PERRY: I'd like to give you my impression, my

1 own personal opinion about the cost difference.

2 In my view, there's two types of utilities
3 involved in updating the in-service inspection test program.
4 So, you're going to get a wide range of numbers from each of
5 those.

6 On one hand, I think those utilities who have
7 representatives that are actively participating in the code
8 committees are very cognizant of what the changes are and
9 what's the impact and what's the value involved.

10 So, on one hand, I think those utilities can make
11 the update at a much lower cost because of their personal
12 involvement and doing it in-house, as opposed to another
13 utility, the other extreme, let's say they haven't been
14 involved with the code changes at all, they're just going
15 with what they have.

16 Now, all of a sudden, they're getting to the end
17 of the 10-year interval, they have to update.

18 Well, what's this all mean, trying to get caught
19 up at the last minute, and they find themselves going out
20 and hiring somebody else to develop changing the program and
21 modify all those procedures and train their people,
22 significant difference in the cost of those.

23 CHAIRMAN MESERVE: Mr. Beedle, you'd also
24 suggested that we might depart from the staff and go to
25 option 1A, which was to go back to the 1989 code.

1 The Commission had previously revised the rule to
2 put us to the 1995 code with, I think, the 1996 amendments.

3 So, it appears that your request is that we
4 backslide from where we are, and could you comment about why
5 we should depart from a decision we've already made?

6 MR. BEEDLE: Chairman, I would never suggest that
7 you should backslide. I wouldn't want to encourage that at
8 all.

9 No, our recommendation has always been, since the
10 outset of this discussion, to -- we agreed with the staff's
11 decision to baseline at the '89 code -- or '89 update -- and
12 to eliminate the 120-month update.

13 So, we're -- I think we're consistent in that
14 regard.

15 The Commission's decision to go to the '95 edition
16 -- we don't have any major objection to that, although,
17 given an option, I would just as soon go back to the one
18 that we recognized was fundamentally sound.

19 So, I guess, if you're going to depart from your
20 original decision, then we'd recommend you go back to the
21 '89, but I certainly don't want you to backslide.

22 CHAIRMAN MESERVE: Okay.

23 Dr. Shack, I have just one question for you.

24 The main thrust of Mr. Beedle's comments was that
25 we apply the backfit requirements in all kinds of other

1 contexts, and you talked a little bit about why this was
2 different and that we ought to not apply those requirements
3 with regard to this code just in case we are wrong and
4 because it's related to defense-in-depth, and I'm a little
5 concerned that that gets us on a slippery slope, that there
6 are lots of things that might fall into the area where
7 they're defense-in-depth-related or we might be wrong with
8 our existing requirements and, therefore, should update, and
9 it seems to me the argument that you've made could create a
10 exception to the principle for exceptions to the backfit
11 rule, which is a troubling one, and I wonder if you could
12 comment.

13 DR. SHACK: Well, the ACRS did write a letter
14 saying that we needed some additional guidance and policy on
15 defense-in-depth for precisely that reason, that -- you
16 know, defense-in-depth arguments are difficult to justify on
17 the basis of risk.

18 You know, we have designed these systems so that
19 the risk of pipe failure is small, and from a risk argument,
20 you might argue that you don't need ISI at all, let alone an
21 update to the ISI requirements from a purely risk update.

22 So, we believe that in-service inspection is a
23 defense-in-depth requirement. It's not really related to a
24 reduction risk. It's related to essentially a reduction in
25 the uncertainties associated with any possible estimates in

1 that risk, and again, the structuralist point of view, and
2 again, it can lead you to a slippery slope, you know, and
3 without policy and guidance, you are left on a case-by-case
4 basis.

5 You know, our judgement is, in this particular
6 case, this is an important application of defense-in-depth,
7 at a high level and an important level, and ought to be
8 retained.

9 CHAIRMAN MESERVE: Other than the fact that you
10 sort of know it when you see it, can you tell me why ISI and
11 IST is different from other things that are arguably
12 defense-in-depth-related?

13 DR. SHACK: In-service inspection, because it does
14 -- you know, the one thing that you can't do is predict the
15 future, you know, and you can't be assured in every
16 engineering analysis you've considered everything, and so,
17 in-service inspection is that -- the suspenders to the belt
18 that looks for things that, you know, you've missed and
19 phenomena that you haven't anticipated in your design, and
20 so, you know, that's one argument, for example, that -- you
21 know, we wouldn't support updating every update in the
22 consensus code, that's not the thing, but ISI on the primary
23 pressure boundary we believe has a fundamental importance.
24 People don't like leaks from their primary pressure
25 boundary, like steam generator tubes.

1 CHAIRMAN MESERVE: Mr. Perry?

2 MR. PERRY: I would like to just add a comment, if
3 I could, too, along those lines, relative to maintaining
4 pressure boundary integrity and operational readiness.

5 I think, in the proposed amendment to the rule,
6 the staff's own words indicated to the effect that the
7 question of the backfit rule that was previously questioned
8 by ADI and, I think, NUBAR, the Commission's position was
9 they maintained that there wasn't sufficient justification
10 to support their argument and that the Commission's position
11 was that they would continue to apply it on routine updates
12 of the ASME code, which has been the practice in the past,
13 up until now.

14 Now, I'll submit to you this: One of the changes
15 that you've incorporated in the latest regulation on the O&M
16 code has to do with the pump -- integrated pump testing that
17 I mentioned was requested by the NRC.

18 Now, in my judgement -- that's in the regulation
19 now.

20 In my judgement, I'm not sure that it would meet
21 the backfit rule if you tried to apply it.

22 So, I think you need to be cognizant of that, too.

23 Now, that certainly has a big impact on enhancing
24 safety, but it may not, you know, meet this criteria of
25 significant safety impact.

1 So, I think we have to -- you know, I look at it
2 from the point of view of what does the public's view of how
3 we're protecting their health and safety mean, and I think
4 that we're not talking about -- certainly, the plants are
5 not -- they are safe, but certainly, if we can do things
6 better, if we learn from our experience and we can improve
7 and we can reduce costs in the process and enhance safety, I
8 think we ought to do it, but to say no, we're not, make it
9 non-mandatory, we're changing the rules, and I think we have
10 to answer to the public, well, why is it now -- you know,
11 they're saying the utilities are being forced to cut back,
12 they've got to be more competitive, and so forth.

13 So, I think it puts the Commission in a bad light,
14 in my view.

15 CHAIRMAN MESERVE: Commissioner Dicus.

16 COMMISSIONER DICUS: Okay. Thank you.

17 Let me put my first question to Mr. Beedle, NEI,
18 and it really has to do with the issue of cost, so I want to
19 pursue that a little more, because you clearly made cost an
20 important part of your discussion.

21 The ACRS suggests that cost is maybe not that much
22 of an issue, and I think even the ASME questions the cost
23 thing.

24 So, I have to ask you, when we look at this as a
25 possibility of reduction of unnecessary burden -- i.e., the

1 cost -- is this the main concern of the industry, the only
2 driver behind your recommendation, or is there something
3 else?

4 MR. BEEDLE: Well, I think cost is important,
5 Commissioner, but I don't think that that's the main focus.

6 The main focus is we have a process that's
7 employed in the regulatory framework in every area except
8 this one, and it's the backfit analysis.

9 We look at what is the gain versus what it's going
10 to cost the industry, as well as the NRC, and the impact of
11 implementing those regulations, and we're reasonably
12 confident that this needs to be subjected to that same
13 process.

14 Now, the issue of ISI -- we're not saying we're
15 abandoning the test of these plants.

16 We're not saying we're not going to do the
17 inspection of these plants.

18 We're not looking for leaking reactor vessels and
19 pipes, and I don't think that, if we stopped doing an
20 automatic update of the ISI program, that it's going to
21 cause these plants to fall apart.

22 So, any suggestion from anybody that that's the
23 case, I think, is absolutely misleading.

24 We still have an inspection program.

25 The question is the incremental change in the

1 inspection program that's developed through the ASME code
2 process -- is it warranted from a cost-benefit point of
3 view, as examined by the backfit rule?

4 COMMISSIONER DICUS: I think that helps some, but
5 I think the focus of your comments were on cost, and I was a
6 little concerned about that.

7 If that's the only driver we have, we've got to
8 look at the secondary drivers that are there.

9 Let me go to a question with the ASME
10 representative, Mr. Perry.

11 It has to do with your slide four, which is a very
12 interesting slide, but I have to tell you, I found it
13 confusing and not particularly helpful.

14 Even when I went to the back-up material, that
15 didn't help a whole lot.

16 I appreciate the back-up material and what you
17 went in to try to define in detail.

18 I'm not sure I understand the difference between
19 primary basis and secondary basis, but also, of all these
20 things -- and I might center in, which would mean a lot to
21 me, the reduced radiation exposure -- what are the most
22 significant changes? To me, I didn't pull that out of your
23 material.

24 These changes, in the last 10 years -- what is
25 really important?

1 MR. PERRY: Okay.

2 Let me first answer your question by explaining
3 the difference between primary and secondary basis.

4 What the section 11 subgroups did is they
5 evaluated each of those changes and tried to classify them
6 according to -- they relate to improved safety or improved
7 industry standards or reduction to radiation exposure and so
8 forth, and when they wrote down on that back-up sheet the
9 first one, that was their primary classification, but they
10 said, you know, it's not just that, there's many others that
11 are impacted. So, they would show several other bases, as
12 well, and so, they call those secondary.

13 What I've tried to show here is the combination of
14 the primary and secondary.

15 In fact, my personal view is I think some that
16 they showed secondary, I felt were probably more primary.
17 So, it's somewhat subjective.

18 But at any rate, that's the difference between
19 primary and secondary.

20 But both of those impact what are you doing by
21 this change.

22 Now, that's a very good question that you ask
23 about what's the safety significance of these.

24 Let me give you a few examples.

25 I think we did to the ACRS, we picked a few, but

1 I'll just pick some.

2 There are many changes that are listed as improved
3 safety that relate to changes in containment examination of
4 IWE and IWO, which happens to be one that the Commission
5 recognized and mandated in their original proposal; they
6 were making it mandatory. So, that's one, and there's many
7 in there.

8 The second one which is significant -- also,
9 there's several there -- relates to Appendix VIII, the
10 ultrasonic testing performance demonstration, and there are
11 further enhancements.

12 In fact, one of the concerns we had was when the
13 Commission first proposed to impose that, we were concerned
14 that we were in the process of doing a pilot plant of
15 verifying that what we had in the code was reasonable, and
16 we were making changes. So, we hadn't yet optimized
17 Appendix VII.

18 So, we were worried that what the Commission was
19 trying to impose was going beyond what was reasonable, so
20 many changes there.

21 That's also another one that the Commission
22 proposed to mandate.

23 So, that's another category of safety significant.

24 Other examples of improved safety include changes
25 to provide, say, supplemental qualification, requirements

1 for UT personnel to improve the UT examiner's skill. That's
2 another category.

3 As we're moving into greater technology and we're
4 looking for more finite things, we need to make sure that
5 the technician's knowledge and experience and expertise and
6 repeatability is there.

7 So, that's one that had a big impact.

8 Also, adding requirements for the application of
9 Appendix VIII flaw sizing to vessels less than two inches in
10 thickness and on components other than those identified in
11 Appendix VIII's scope is another safety significant one,
12 which I might say was issued in the code after the 1995
13 edition. So, it may not be in the current regulation, but
14 that's a significant change, and with it goes refined UT
15 techniques that weren't known 20 years ago.

16 Another example that are important to safety are
17 in the comprehensive pump testing that I mentioned in the
18 O&M code, and also, condition monitoring of valves is
19 another one that's safety significant, and all the work that
20 was done on MOVs, motor-operated valves, we worked with the
21 Commission on that one, and also, in the O&M area, on
22 service life requirements for dynamic restraints. So,
23 that's another safety significant one.

24 So, those are some examples of what we mean by
25 those 15 -- there's 15 total, is what I've listed, you know,

1 really 13 primary, and then there's two secondary ones for
2 improved safety.

3 COMMISSIONER DICUS: Okay.

4 MR. PERRY: And the reduction in radiation
5 requirements -- there's a lot more, and of course, many of
6 those, you know, have a safety ramification, because as you
7 can reduce the radiation exposure and being able to do
8 things more quickly or expeditiously in a radiation
9 environment, that's also a burden reduction for utilities,
10 as well, enhances their outage time.

11 COMMISSIONER DICUS: So, the improved safety ones
12 are throughout the rest of these or they're separate from
13 them?

14 I mean improved safety -- that would be improved
15 industry standard or reduced radiation exposure, or they're
16 strictly in a separate category.

17 MR. PERRY: Right. All I tried to do is give you
18 examples of the ones that the committee had classified as
19 improved safety.

20 COMMISSIONER DICUS: Okay.

21 I'm not sure I'm real clear on that, but we'll
22 drop that for the moment, for the sake of time, and let me
23 go on, then, finally, to the ACRS, and I want to pull two
24 statements that you've made.

25 You have stated that all three options presented

1 by the staff would maintain an acceptable level of safety, I
2 believe.

3 Is that correct?

4 DR. SHACK: Yes.

5 COMMISSIONER DICUS: Then, statement number two,
6 the staff has stated that there are some plants that are
7 applying code provisions that are 17 years old, they're
8 actually the '83 edition, without any adverse safety
9 impacts.

10 Now, you touched on this in your presentation, but
11 to me, those two statements begin to fight with one another.
12 Would you like the opportunity to comment on that?

13 If we're using '83 standards and it's safe enough,
14 but then we have three options here that would be okay, too,
15 what kind of advice are you giving the Commission?

16 DR. SHACK: You know, they're safe enough in the
17 sense that, if you do the analysis, that you can -- you
18 know, pipe breaks are not -- you know, the system is
19 designed to handle that, and so, from that point of view,
20 they're relatively low-risk, and you know, you can say
21 you're maintaining safety because of that.

22 If you really want to reduce the possibility of
23 pipe failures and pipe leakage, then you know, I think that
24 an effective inspection program adds to that.

25 And that's, you know, one of the arguments I would

1 have with NEI, that Appendix VIII, to me, is perhaps the
2 most technically significant of all the improvements that
3 have been proposed in the code over the '89 edition, the
4 performance demonstration.

5 And it really comes down to the fact that, you
6 know, you have to really be able to demonstrate that you can
7 find the defect that you're looking for, and you know, the
8 staff, ASME, and ACRS all find that important.

9 And yet, you know, that's the one particular
10 element that NEI has singled out as -- you know, they don't
11 like that addition to the 1989 demonstration and, you know,
12 should be subjected to a cost-benefit analysis.

13 Well, again, for a low-risk system, it's difficult
14 to defend defense-in-depth on a risk basis.

15 COMMISSIONER DICUS: Okay.

16 DR. SHACK: It's just the wrong -- it's the wrong
17 metric to use in this particular case.

18 COMMISSIONER DICUS: But it's difficult -- I guess
19 what you're trying to tell me, if a plant, a licensee is
20 using a very old edition of the code and it's working okay
21 but they ought to do better, it is difficult to make a
22 cost-benefit analysis.

23 DR. SHACK: Yeah. And you know, I would -- you
24 have to look at particular cases.

25 I suspect that, in most of the cases, when the

1 plant is using the very old code, they're probably doing
2 inspections for cause, you know, on significant things.

3 You know, if they have stress corrosion cracking
4 in their boiling water reactor, then, you know, you're only
5 using the ASME code sort of where you haven't really
6 identified a particular mechanism.

7 You know, there are augmented inspections wherever
8 we know there's an ongoing identified mechanism of
9 degradation.

10 The ASME code is where we really haven't
11 identified a particular mode of degradation; we're just
12 trying to assure ourselves that there are none going on.

13 COMMISSIONER DICUS: Okay.

14 DR. SHACK: You know, it's looking ahead. It's
15 anticipating.

16 COMMISSIONER DICUS: I'll stop here.

17 Thank you.

18 CHAIRMAN MESERVE: Commissioner Diaz?

19 COMMISSIONER DIAZ: Yes.

20 I want to do the same I did the other day and
21 going to essentially be the same question for everybody.

22 Let me start with a small statement, Mr. Chairman.
23 I like small statements.

24 I think everybody agrees that there is a
25 significant importance on maintaining regulatory stability

1 and stability of the implementation of that regulation in
2 the power plants. I think everybody agrees with that.

3 I think where there is agreement is what is meant
4 by that regulatory stability and implementation.

5 I think I hear argument for maintaining that
6 stability be state-of-the-art processes, things that are,
7 you know, with a certain frequency, brought up to what the
8 state of the art is, and what stability could also mean,
9 that, you know, we maintain what is already working.

10 I think that is really an important issue. Do we
11 really obtain more stability and better, you know, safety by
12 upgrading to state-of-the-art requirements or by maintaining
13 what already exists?

14 That's one question.

15 What do we really mean by stability of the
16 processes and do we mean, you know, maintaining what is
17 working or do we mean really that the process of adopting a
18 code and updating it with, you know, 10-year frequency -- is
19 that stability, you know, and I'd like each person to answer
20 that question.

21 And the second part of the question is on the
22 issue of cost that has been already addressed.

23 Is the cost really inclusive?

24 You know, has anybody looked at the cost as it
25 would evolve from the standpoint of exemptions or, you know,

1 small events might not be detected if you don't have the
2 state-of-the-art, the latest, you know, ISI and IST code
3 available and all of the improvements?

4 Is there really some balancing that comes in the
5 issue of cost that might be hidden from us at the present
6 time?

7 Two parts, regulatory stability, implementation
8 stability, and cost as an all-inclusive consideration.

9 MR. BEEDLE: Let me start out, then, with a
10 comment on the regulatory stability issue.

11 In '91-'93 timeframe, we had a utility that did a
12 review of the ASME code, submitted a cost-beneficial license
13 proposal that was well founded, well studied, clearly
14 demonstrated that the -- while the ISI/IST program was
15 important to us and we recognize that and we're not
16 suggesting for a moment that we abandon that but to continue
17 to update based on where we are today was not particularly
18 beneficial or useful to the industry, in view of the cost
19 that's incurred in that process.

20 Now, that's '93.

21 Here we are in the year 2000.

22 So, I would suggest that we haven't had
23 well-founded regulatory stability in this area since then.

24 COMMISSIONER DIAZ: We'll call that stability,
25 because it hasn't changed.

1 MR. BEEDLE: Maybe you're right.

2 COMMISSIONER DIAZ: And that's the point.

3 MR. BEEDLE: Good point. Regulatory stability but
4 perhaps a lot of anxiety and frustration in the rest of the
5 industry trying to resolve and deal with those issues.

6 COMMISSIONER DIAZ: The present frame of year 2000
7 is the one that I'd like.

8 MR. BEEDLE: And we certainly support that.

9 COMMISSIONER DIAZ: Okay.

10 MR. BEEDLE: The issue of cost --

11 COMMISSIONER DIAZ: I'm sorry. State of the art
12 or not state of the art?

13 MR. BEEDLE: Well, I see the state of the art gets
14 embodied in the process of going through these consensus
15 standards, and we have many of them.

16 We have encouraged the development of standards on
17 fiber-optics.

18 We have encouraged the development of standards
19 for a number of areas where we see a clear advantage to
20 improving processes and procedures and systems as a result
21 of employing this improved technology, and once we get those
22 standards in place, then we employ those either in the
23 revision modification or adjustment of our systems.

24 So, I don't think that this process has been
25 negligent in incorporating advances in technology. In fact,

1 I think it has encouraged it, and we've used that process to
2 foster the development of standards for the use of the
3 industry.

4 COMMISSIONER DIAZ: Okay.

5 MR. BEEDLE: Cost. I don't want to leave you with
6 the impression that cost is the only issue in here. It's
7 cost versus what benefit you gain.

8 Now, I am not trying to head to head with Mr.
9 Perry on what changes were made in the code, but let me just
10 give you an idea of what we were looking at in terms of cost
11 and what we were looking at in terms of benefit when we take
12 a look at the 1989 edition versus the '92 edition for ASME
13 code.

14 We did an evaluation of those two codes, and there
15 were some 84 changes between those two code revisions.
16 Seventy-seven of them were editorial. Eight were errata.
17 There were 52 changes that did not make any change in
18 requirements whatsoever. Twenty-two of them reduced
19 requirements, and some 25 had an increase in requirement,
20 and none of them were safety significant. So, even if we
21 spent \$100 making those kind of changes, I'm not sure it
22 would be cost-beneficial.

23 So, that's not to say that the code doesn't
24 advance with time, but we haven't had safety-significant
25 issues come out of these codes, and if they were, our

1 generic process within the regulatory framework doesn't go
2 to the code issues; they solve them through other
3 mechanisms.

4 So, I'm not sure that I could satisfy in my own
5 mind or in the minds of my members that the codes are
6 necessary to the safety of the plant.

7 They enhance safety, no question about it. They
8 codify processes, no doubt about it.

9 They incorporate new technology and new techniques
10 in the testing and inspection of the programs, no doubt, and
11 we incorporate those whether they're required by the NRC or
12 not.

13 COMMISSIONER DIAZ: Okay. Thank you, sir.

14 Mr. Perry?

15 MR. PERRY: Yes.

16 To answer the first part of your question relative
17 to regulatory stability, I submit that, up until this
18 proposed change, the process has been such that there has
19 been a requirement to update every 10 years to the latest
20 ASME code, and it was mandated, and again, we're talking
21 about maintaining pressure boundary integrity and
22 operational readiness of mechanical equipment, which is
23 quite critical to the success of health and safety, and in
24 that process, I think that we've seen some changes in
25 practice over the years, and I'll give you one illustration

1 of one that I had personal experience on.

2 I was in the nuclear business for over 40 years,
3 and one of the jobs I had was executive at a nuclear utility
4 during the design, construction, and operation of the plant,
5 and we were in an outage at the end of a 10-year interval,
6 and we were looking to make sure we met all the
7 requirements, and lo and behold, we found there were many
8 cases where we had not met all the 10-year requirements.

9 So, we committed to the NRC to do all the
10 requirements before we restarted, and the deeper we dug, the
11 more we found, and what had happened at this utility was
12 that the work was done by an ISI group; they hired a
13 consultant to do all the testing.

14 This is a B-31 plant.

15 Many of the welds that they tried to inspect were
16 never ground.

17 They were never designed to be UT'd; they were
18 PT'd and x-rayed.

19 So, what the consultant did -- they just wrote on
20 a little report, not prepped for UT, and the utility person
21 threw it in a file.

22 When we came to the end of this, when QA got
23 involved, we found all these had not been done. We also
24 found many other errors in how we interpreted the
25 requirements, mis-interpreted, and had to make adjustments

1 and refinements to get this done.

2 Now, that was an assessment that we did as a
3 utility, got that all squared away, took a lot of effort and
4 many man-months, down time, during a period of time when NRC
5 used to have NDE trailers to go in and do their own
6 inspections.

7 They don't have it now.

8 So, the utility -- the NRC has backed off now with
9 respect to the involvement in some of these activities.
10 We're relying more and more on utilities.

11 They're under a lot of pressure to keep the costs
12 down.

13 So, I think they could consider this a
14 dis-incentive to have to expend these additional dollars.

15 But to add to that, when I get to the cost aspect,
16 it's not just the cost of making the update and the changes,
17 but as I pointed out, if there's a disparity between what is
18 baselined and what the latest code is, I can guarantee you
19 that utilities are going to have to go in and get exemption
20 requests to apply code cases that are not yet approved and
21 other changes to make their program workable where they
22 might have misinterpreted or done something wrong.

23 Each one of those requires additional effort on
24 the part of the utility, additional staff effort on a
25 one-by-one basis, and if you make this non-mandatory and

1 they pick and choose and cherry-pick and you say the staff
2 is now going to decide whether they're doing it properly, I
3 question whether all the staff members may be qualified.

4 The code is very complicated, and to just pick a
5 portion out and miss something else that goes with it can
6 easily happen.

7 So, when you talk about stability, I think we have
8 the stability when you require the update, require everyone
9 to standardize and make it uniform.

10 Now, in terms of the NRC looking at enforcing,
11 they know what the requirements are; there's consistency for
12 all the inspectors and the teams that go in there.

13 When each utility is doing their own thing, you
14 know, if I were the inspector, I'd pull my hair out, saying,
15 you know, what goes on, all these changes, and so, how it's
16 handled between the region and how it's handled between
17 headquarters becomes a major problem.

18 COMMISSIONER DIAZ: Thank you, sir.

19 Dr. Shack?

20 DR. SHACK: In terms of regulatory stability, when
21 you say state of the art, the ASME code is a slow-moving
22 conservative sloth.

23 I mean, you know, it's not exactly rushing to the
24 frontiers, and I think the consensus process itself is a
25 strong filter on things that, you know, although there's no

1 explicit cost-benefit requirement, these people are all in
2 the field, you know, they have to implement these things,
3 they have an intimate sort of day-to-day knowledge of what
4 actually goes on.

5 And so, I believe that there's a very -- a good
6 filter there for requirements that are not particularly --
7 you know, again, obviously, we correct editorial errors and
8 such, but I think the true changes in the code really arise
9 out of a consensus of people who are technically the most
10 familiar with this thing.

11 And they're, again, acutely aware of what will
12 happen when they actually have to try to implement these in
13 the field, so that the thought that they're off -- you know,
14 they're nerds advancing the state of the art, I've got a
15 800-megahertz Pentium now and, you know, I'm going to do
16 something different, you know, it's just not the way it
17 works.

18 It's a different sort of process.

19 So, I think, you know, stability, to my mind, is a
20 process that's been working fine for 30 years, and you know,
21 I haven't seen a good case to change it.

22 The cost -- you know, we -- at the ACRS, we only
23 know what's been presented to us, and as I say, I haven't
24 seen a convincing case that the costs are high either way.

25 You know, people cite ranges that go all over the

1 map.

2 There are obviously elements of costs on both
3 sides of the equation.

4 As I say, our sort of judgement when we're all
5 said and done was that it was hard to see a large net cost
6 either way.

7 CHAIRMAN MESERVE: Thank you.

8 Commissioner McGaffigan.

9 COMMISSIONER MCGAFFIGAN: Mr. Beedle, yesterday we
10 renewed the license for Calvert Cliffs, and that was a major
11 milestone here.

12 If Watts Bar gets a renewed licensing, it will be
13 operating in 2055 -- I think it got its license in '95 --
14 and I assume it was licensed -- it was a long process, like
15 many of the post-TMI plants, but it's probably licensed to
16 the '83 or, at best, '89 version of the code.

17 Under your recommendation, they would never --
18 they would be operating in 2055 to the '89 code, perhaps
19 cherry-picked, as Mr. Perry said, with addenda since then.
20 Does that make sense?

21 I mean could you operate a plant in 2055 to a 1989
22 code that would be able to buy spare parts? Wouldn't they
23 have to update?

24 MR. BEEDLE: If the major elements in revision to
25 the code are editorial in nature and not safety significant,

1 then I don't see any problem.

2 COMMISSIONER MCGAFFIGAN: Take us to the next
3 point.

4 I mean you compared '89 and '92, and I assume that
5 must have been in the Entergy rule-making package that you
6 referred to, and I'm not familiar with that, but we're
7 talking 10-year periods here, we're not talking three-year
8 periods, and Mr. Perry is making the case that, over a
9 10-year period -- and ACRS is heartily agreeing -- that
10 there were some -- and I think the staff heartily agrees on
11 this Appendix VIII -- there were some significant
12 improvements to the code over a 10-year period, and since --
13 you know, I think the analysis has to be, you know,
14 comparing one piece of the code to what it was 10 years
15 previously rather than to -- maybe Mr. Perry would agree
16 that the '92 versus '89 wasn't a big deal.

17 MR. BEEDLE: Well, I think many of the beneficial
18 changes in the code have centered on our testing techniques
19 and how you do the inspections.

20 I think if there was some analysis done by ASME in
21 developing codes that concluded that our vessels and major
22 structures were -- needed to be upgraded, then I think we'd
23 be handling that in a different process than an update to
24 the code.

25 So, I don't think that we're dealing with a

1 necessary updating of the code in order to ensure safety of
2 the plant.

3 I think that that's going to happen through the
4 regulatory process.

5 COMMISSIONER MCGAFFIGAN: Mr. Perry makes the
6 point that, if you don't update the code in a holistic
7 manner, an integrated manner, and you allow this
8 cherry-picking, as he calls it, to go on, that that may
9 prove to be more burdensome both to the staff and for the
10 industry, because the exemption cases cost more.

11 Do you have any comment on that?

12 MR. BEEDLE: Well, I don't know that that has been
13 a major issue over the last 15 years.

14 We've updated the code several times where the
15 utilities have encountered the 10-year ISI update process,
16 but in the interval, we've had numerous examples of
17 exemptions necessary to improve techniques for inspection in
18 the ISI/IST program.

19 So, that's happening even if you decide to have a
20 requirement to update this code every 10 years.

21 I don't remember the exact description that Mr.
22 Shack used for the ASME code, but when you update this every
23 five years, I mean you have to have seen some changes in the
24 code cases in that interval, and we certainly aren't going
25 to wait for five years if we see some beneficial use of some

1 of those code cases.

2 We've got to figure out whether or not this is
3 really something that's essential to safety or not. I think
4 that's where we've got come down on this.

5 COMMISSIONER McGAFFIGAN: Mr. Perry, did you want
6 to say something?

7 MR. PERRY: I would like to submit that I think
8 that what we're talking about on these exemptions was a case
9 of the NRC having endorsed the 1989 edition of the code and
10 now we're at 1999 that they made the change.

11 So, during that interval, there wasn't an
12 endorsement of the later code, and secondly, ASME has
13 deliberately tried to maintain code cases to make it easier
14 for the NRC to endorse those by reg guides, and even those
15 lag behind, that's what's forced these updates.

16 But if you look at it in the future -- let's say
17 the 1995 edition and 1996 addenda, which is currently in the
18 regulation -- that's frozen, and now you move forward to
19 2055 -- there's going to be a hell of a lot of enhancements
20 in things.

21 All of these are going to be done by code case or
22 exemptions or what have you, and those are very costly.
23 It's costly for the utilities not only to do it but to
24 submit it to the staff and then answer their questions back
25 and forth, it's expensive for the staff.

1 I submit, if you're able to divert your resources
2 more on updating to the later codes and a quicker
3 endorsement of the code cases, you do the analysis once, now
4 all the utilities can implement this, you don't need all of
5 those special approvals.

6 So, that would be a burden reduction, first class.

7 COMMISSIONER MCGAFFIGAN: Mr. Perry, one of the
8 points you make is the potential loss of interest on the
9 part of the industry in participating, and you cited in
10 passing -- and it's not something I'm familiar with -- the
11 problems you're having with NQA in getting the staff's
12 attention to a submission in '97.

13 I know it's not the subject of today's meeting,
14 but could you just tell me in passing what that is and why
15 you think it's safety significant?

16 MR. PERRY: Yeah. That one may not be safety
17 significant, but again, I think that there are significant
18 changes in the NQA-1 standard, 1997, that's
19 performance-based and put the emphasis on the right things
20 that picks up lessons learned and experience and key things
21 that I know the Commission has expressed an interest in, and
22 yet, they're reluctant to come out with a reg guide
23 endorsement, because they say -- and I haven't seen the
24 utilities beating down the bushes saying they want to change
25 it, and things like configuration management --

1 COMMISSIONER MCGAFFIGAN: That's a case of loss of
2 interest on the part of both the utilities and the staff,
3 you would say, in that case.

4 MR. PERRY: Yeah. So, we're pursuing it through
5 the utilities and getting them to come to the Commission and
6 say, now, here's what we would like and why, but what's the
7 Commission's position on this?

8 COMMISSIONER MCGAFFIGAN: The final issue is the
9 backfit issue, and this gets to this integrated issue.

10 We have before us -- and you guys haven't seen it.
11 We've got a paper on fitness for duty, where we're dealing
12 with a morass of things in looking at -- I think it's 28 or
13 31 worthwhile exceptions to the backfit rule which might
14 pass a -- don't pass the substantial benefit test but maybe
15 pass a worthwhile benefit, you know, cost -- benefits
16 greater than cost.

17 If you look at this as a whole -- and I guess I'll
18 direct this to Mr. Shack -- what is your best guess, if you
19 get rid of the -- the backfit rule doesn't apply here, but
20 if you apply a cost-benefit test to continuing the code
21 requirement -- you know, Mr. Perry has already answered --
22 would there be more benefit than cost?

23 Get rid of the words "substantial benefit." Would
24 there be more benefit than cost to continuing this
25 requirement?

1 DR. SHACK: You mean if I compute the cost per the
2 109 guidelines, by the standard regulatory analysis.

3 COMMISSIONER McGAFFIGAN: The standard regulatory
4 analysis stops at the substantial benefit test and doesn't
5 get very far, and that's the problem we're facing in this
6 paper. A lot of things don't pass the substantial benefit
7 test. They might pass a cost-benefit test.

8 So, you know, at the margin -- you know, 50.109
9 doesn't just have cost-benefit in it; it has a substantial
10 benefit before you even go to cost-benefit.

11 So, get rid of the substantial benefit test and
12 then go to are the costs, on balance, less than the benefits
13 or more than the benefits?

14 DR. SHACK: This is one of those where it's very
15 difficult to calculate the benefits.

16 I mean you're sort of pushing the limits of your
17 technology.

18 You know, how much is an improvement in in-service
19 inspection a benefit, and that's very difficult to quantify.
20 I suspect I can skew cost-benefit analyses within my
21 uncertainty range.

22 COMMISSIONER McGAFFIGAN: Okay. I'll let you off.

23 CHAIRMAN MESERVE: Mr. Merrifield.

24 COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman.

25 Mr. Perry, you talk about a variety of different

1 things to hammer out.

2 You raised a concern that if we did not have a
3 requirement to do these updates that there may be less
4 interest on the part of industry.

5 I guess my question is this:

6 Does it change in the end if industry is aware
7 that those provisions are voluntary?

8 Does that change the dynamic for how the
9 participants are going to be engaged in the process of
10 developing their roles?

11 MR. PERRY: Absolutely.

12 COMMISSIONER MERRIFIELD: And how might that
13 change?

14 MR. PERRY: I think that the individuals who
15 participate in codes and standards are middle-level to
16 worker individuals who are technically knowledgeable of the
17 subject or intimately involved in implementing these things,
18 and they have to have approval to participate and get
19 support from their companies as the NRC representatives has
20 to have budget to do it, and if they're told this is no
21 longer mandatory, they're saying, well, we don't have to do
22 it, so it's not required, I'm going to reduce my cost, so
23 I'm going to just withhold participation.

24 We've experienced -- and I don't think this is
25 uncommon.

1 We've experienced reductions in volunteers as
2 industry -- the nuclear industry shrunk and as competition
3 became greater.

4 They tightened the belt.

5 We've also experienced attrition due to older
6 mature people retiring and not -- the utility saying I'm not
7 going to replace that person, I'm not going to continue to
8 support the code like I used to.

9 So, it's a struggle to maintain good volunteers,
10 but besides the effort of the volunteers, there's research
11 that goes on to back up a lot of these.

12 I can guarantee you that performance
13 demonstration, the involvement of EPRI and industry and the
14 utilities was tremendous.

15 So, it's not until a lot of that's done that we
16 try to codify that.

17 That's going to be lost. There's no incentive to
18 do the research.

19 Who's going to fund it?

20 So, I think there's a big difference, and I
21 submit, I think the same thing is going to impact the NRC.

22 They're going to say -- you know, the individual
23 manager says my budget's being reduced, what can I cut out?
24 Well, let's cut out travel.

25 Where do you go? Well, you go to these code

1 meetings.

2 Well, do we have to go to all of those?

3 So, I think it's going to have a negative impact,
4 and the mix is going to be different.

5 I submit that what you'd probably concentrate on
6 is code cases, not revisions.

7 COMMISSIONER MERRIFIELD: Mr. Beedle?

8 MR. BEEDLE: I think, clearly, there is financial
9 pressure in the operation of these facilities, as the
10 environment changes.

11 I don't think that it means that the industry is
12 going to abandon the development of codes and standards that
13 are necessary for the safe, efficient, and effective
14 operation of these facilities.

15 We see significant involvement with the NSSS
16 vendors.

17 We see involvement with ASME.

18 We see involvement with ANS.

19 We see involvement with EPRI.

20 Now, whether or not those change with time, I
21 think it's going to depend on whether or not there's any
22 benefit to be gained from them.

23 If the utilities can gain through ASME, then they
24 will use ASME process.

25 If they're going to gain through the NSSS vendor

1 groups to solve their technical problems, I think that's
2 where they're going to go to solve them.

3 So, it's really is there a benefit to the utility
4 in participation?

5 That's really going to be the test.

6 COMMISSIONER MERRIFIELD: You've repeated that
7 theme a variety of times, saying beneficial to the industry,
8 and I'll be honest, that troubles me.

9 Through what lens are you calling beneficial to
10 the industry?

11 You know, here we have various pillars we use to
12 determine our regulatory basis for moving forward on a
13 risk-informed regulatory structure.

14 Those include reducing unnecessary burden, but
15 they also envision using risk to make a better definition
16 for where we're going on a regulatory basis, and that means
17 sometimes reduce unnecessary burden and sometimes increase
18 burden based on risk.

19 We also have the pillars of public confidence, and
20 I guess -- it strikes me -- you know, a sort of devil's
21 argument you could make is, if you set a 1989 baseline
22 standard and anything above and beyond that is voluntary on
23 the industry, and if you use that beneficial-to-the industry
24 standard, what you have is a one-way ratchet.

25 Those cases in which you can reduce, you choose,

1 you reduce that unnecessary burden, and those which would
2 have some increase in costs, you wouldn't.

3 I mean under what basis under a strictly voluntary
4 system would industry choose -- how would it determine a
5 benefit if it's going to be an increased cost?

6 MR. BEEDLE: Well, we -- I think we've got a
7 number of examples in the regulatory framework where the
8 industry has been -- has addressed safety issues, at the
9 behest of the NRC, totally outside the framework of the ASME
10 process.

11 So, if the ASME was identifying safety issues that
12 need to be addressed by the industry, I think we'd be
13 addressing them.

14 So, I mean it's not a matter --

15 COMMISSIONER MERRIFIELD: Even in the absence of
16 the NRC saying it meets the backfit test and we're going to
17 make you do it.

18 MR. BEEDLE: Commissioner, we've got scads of
19 codes and standards out there that govern the way we do
20 business, in a lot of cases, that are not mandated, updated
21 every 10 years, and we end up going through a process that
22 gets those things in place.

23 The desire to not have a regulatory requirement to
24 update every 10 years does not mean that we're abandoning a
25 process that gives us some standardization in inspection and

1 testing of our systems.

2 That's not what we are after.

3 COMMISSIONER MERRIFIELD: I didn't know whether
4 Mr. Perry or Mr. Shack wanted to make a comment relative to
5 that. Yes, no? Okay.

6 We've got to move forward.

7 I guess, Mr. Perry, we touched briefly -- you said
8 that there are states that require the ASME code outside of
9 our process.

10 If you could share with me and the other members
11 of the Commission which are the states that do apply those
12 independently, that would be helpful, as it relates to
13 non-nuclear facilities.

14 MR. PERRY: I don't have the answer, but we can --

15 COMMISSIONER MERRIFIELD: If you can provide that
16 at a later date, that would be helpful.

17 Thank you, Mr. Chairman.

18 CHAIRMAN MESERVE: I would like to thank the
19 panel. I very much appreciate their participation this
20 morning, and let me call the staff to the table.

21 MR. MIRAGLIA: With me today, we have Brian
22 Sheron, who is the Associate Director for Project Licensing
23 and Technical Analysis in the Office of Nuclear Reactor
24 Regulation; Jack Strosnider, to my left, is the Director of
25 the Division of Engineering in NRR; and to Jack's left is

1 Tom Scarbrough, Senior Mechanical Engineer in the Mechanical
2 and Civil Engineering Branch in NRR.

3 Brian?

4 MR. SHERON: Thank you.

5 Actually, I guess the first slide is just some
6 background.

7 I think that's already been discussed. So, I'd
8 like, for time's sake, to skip maybe to the second one,
9 current ISI/IST updating approach.

10 A lot's been said already, so I don't want to
11 repeat.

12 What I would like to do, actually, is clarify what
13 we are -- what the staff is proposing. We are proposing
14 that we baseline the endorsed edition of the code that is
15 required, the 1995 edition.

16 Our plan right now -- and we have resources
17 already identified -- is that we will be endorsing probably
18 every year the latest addenda to the code that come out, and
19 then, every three years, we would endorse, hopefully within
20 a year or two of its issue, the latest edition of the ASME
21 code.

22 We are saying we would endorse it, which means
23 that utilities would be allowed to use it, okay, but it
24 would not be required.

25 As we do that review of that code or the addenda,

1 we will be subjecting it to the criteria in the backfit
2 rule, 50.109.

3 If we believe that there are improvements in the
4 code, okay, that are important and substantial increase in
5 safety and pass the backfit test, we would go forward and
6 backfit them as a requirement, and we would anticipate that
7 we would backfit them to be implemented at that time, not
8 wait 10 years.

9 My personal feeling is that, if the code
10 improvements are, indeed, substantial, we will probably be
11 putting in requirements more frequently or requiring plants
12 to update more frequently, perhaps, than even is required
13 now.

14 A plant can wait 10 years before it has to update,
15 depending upon when a code is endorsed and what the latest
16 endorsed edition is.

17 As you see, we have plants -- we have five
18 operating on the '83 edition, we have 18 units at the '86
19 edition, and we have 81 units with the '89 edition.

20 We would probably look at, as I said, each edition
21 of the code, we would pick out those areas that we believed
22 were substantial improvements to safety, and we would
23 require them at that time.

24 So, we would not be basically saying everybody
25 must update to a complete edition of the code, but where

1 there are areas where there are substantial improvement, we
2 would require those.

3 After some period of time, my guess is that, if we
4 see that there is a substantial improvement in the overall
5 code, then we would probably come forward and say we would
6 anticipate backfitting the entire code.

7 We do have guidance from the Commission back in
8 1993, actually, on backfitting against 50.109 for codes and
9 standards, and this is contained in the CRGR charter,
10 actually, and there is very specific guidance, but
11 basically, what that guidance says is that we can use
12 qualitative arguments to meet the substantial improvement in
13 safety criteria of 50.109 with regard to standards, codes
14 and standards.

15 I'm looking at Revision 6, which is the April 1996
16 charter, but there is words here that says we can use
17 qualitative arguments to require backfitting to codes and
18 standards.

19 So, we believe we have sufficient guidance and
20 sufficient ammunition, I would say, in order to backfit
21 codes and standards if we see there is a substantial
22 improvement.

23 We are not proposing cherry-picking. We have said
24 that, when a utility would update to a newer edition of a
25 code, whether it's endorsed or required, they would be

1 required to update to the entire edition, okay?

2 It's not a matter of just going in and saying I
3 want these pieces that are beneficial to me but I'm not
4 going to take that stuff that puts more requirements on me.

5 If you want to update to the new code, you do it
6 in its entirety.

7 Now, just like is allowed today, if a utility
8 wants to take exception to some of those requirements, there
9 is a process they can do that, okay?

10 They can request reliefs from the NRC staff, which
11 means we go through and we do a safety evaluation as to the
12 acceptability of that relief, and we write them a specific
13 approval.

14 So, they cannot cherry-pick without the NRC
15 specifically approving whatever it is that they're asking
16 for.

17 Our process right now -- we don't endorse the
18 addenda through code cases -- I'm sorry -- through our reg
19 guides, okay?

20 Right now, if we endorse any new code cases or
21 anything, it must be through a rule change.

22 It's a little torturous, but we have a footnote in
23 the bottom, in 50.55(a), which talks about a reg guide --
24 1.84, I think it is. Is that right?

25 That reg guide endorses the code cases, but in

1 order for the industry to use them as part of an approved
2 rule, we have to change that footnote in the rule.

3 I would also point out that the -- with our
4 risk-informed option, which we have approved -- we have two
5 approved versions, I think, ASME, a Westinghouse approach to
6 risk-informed ISI and IST, and then there's also an EPRI
7 one, which we've recently approved.

8 They don't specifically require any 10-year ISI
9 updating, okay?

10 In other words, what they require now, I believe,
11 is, after 10 years, they have to go back and take a look and
12 see whether there's anything that needs to be changed, okay,
13 but there's no mandatory requirement.

14 So, if a plant actually goes to the new
15 risk-informed approach, they would not be required to update
16 every 10 years.

17 The only other point I would want to make is that
18 -- just from our experience.

19 We participate on numerous codes and standards
20 committees in NRR as well as the rest of the agency, and I
21 think, as Mr. Beedle said, many of those are voluntary in
22 the sense that we don't require the use of that code or
23 standard.

24 An example that comes to mind is IEEE 603, which
25 is basically the replacement for IEEE 279. 279 is required

1 in 50.55(a).

2 When we endorsed that, 603, we did not make it
3 mandatory, okay?

4 We said that it was an acceptable alternative to
5 279, but it was not mandated.

6 I am just not aware that there has been any
7 decline or decrease in participation in IEEE standards
8 committees, because we are not requiring, you know, revised
9 IEEE standards, as an example.

10 My feeling is that, if the NRC continues its
11 participation on ASME code committees, which we fully intend
12 to, regardless of whether we drop the requirement or not,
13 the industry is going to have a vested interest, I think,
14 for a couple reasons.

15 One is they're going to want to make sure what
16 we're doing on there, and we're not putting in a whole bunch
17 of new requirements, and second, I think, is that, if there
18 is new technology coming along -- and a lot of it is all
19 designed to make life easier, okay, better inspection
20 methods, easier things where they can inspect, get less
21 radiation dose -- I think there is a real desire, okay, on
22 the part of utilities to continue to participate.

23 So, I guess I don't feel as strongly that there is
24 going to be a tail-off in participation, just because we
25 move forward with this approach.

1 So, I think that kind of wraps up my summary of
2 where we are in terms of what our actual proposal is, and I
3 would just reiterate, we are not proposing that we're going
4 to stay on, for example, the 1995 or 1989 edition of the
5 code for the next 20 or 30 years.

6 I would anticipate that we will be having required
7 backfits if there are safety improvements made to the code,
8 probably within, you know, three, four, five years, and that
9 probably, perhaps, you know, within 10 or 15 years, we may
10 look and we may decide that there's enough improvements that
11 we should backfit the entire code.

12 With that, Tom, I don't know if you want to run
13 through your slides real quick.

14 MR. SCARBROUGH: Yes. Thank you.

15 My first slide has the milestones, but I just
16 would like to point out on this slide that we did hold a
17 public workshop with about 60 participants and obtained
18 quite a bit of information in that, and I'll just move right
19 on through that.

20 The next slide are the options, and you've heard
21 those this morning.

22 We are proposing option 1B, which would establish
23 the 1995-96 code, as incorporated in the September rule, and
24 I'll just go on to the next slide.

25 We evaluated the options using the four

1 strategicals of maintaining safety, increasing public
2 confidence, reducing unnecessary burden, and making NRC
3 activities more effective, efficient, realistic.

4 With regard to the first goal, maintaining safety,
5 each option will maintain safety by requiring updating of
6 ISI and IST programs based on its specific criteria for that
7 option.

8 For example, option 1 would include a quantitative
9 and qualitative analysis using the provisions of 50.109 to
10 determine when updating is necessary.

11 Option 2 would continue to require the automatic
12 updating, and option 3 would require updating unless the
13 licensee demonstrated that its program provided an
14 acceptable level of quality and safety.

15 We agree that the '95 edition of the code includes
16 many improvements, and we have heard many of them this
17 morning.

18 Option 1 will continue to maintain safety also by
19 endorsing future code editions for voluntary use and
20 requiring updating when necessary based on the provisions of
21 109.

22 We also will maintain the importance of the code
23 by more timely endorsement of the code editions for
24 voluntary use or mandatory use.

25 And finally, we agree that the updating process

1 does provide a means of assessing program adequacy and that
2 the voluntary and mandatory updating that will occur will
3 allow this to take place.

4 Next slide, please.

5 With regard to the second goal of increasing
6 public confidence, we believe option 1 will increase public
7 confidence by applying the provisions of 50.109 to updating,
8 consistent with the other new requirements for operating
9 reactors.

10 Option 2 may also increase public confidence by
11 requiring updating to the latest endorsed code editions
12 regardless of safety significance.

13 Option 3 would retain the update requirement but
14 may decrease public confidence by the limited participation
15 provided in the approval of alternatives that would be
16 proposed by licensees.

17 Next slide, please.

18 Regarding the third goal of reducing unnecessary
19 burden, the cost of updating an ISI/IST program can range
20 from 200,000 to over a million dollars per plant. We heard
21 that this morning.

22 Under option 1, licensees would only be required
23 to update their programs when the code improvements are
24 sufficient to satisfy the 50.109 provisions.

25 However, regardless of the decision on the update

1 requirement, licensees' cost associated with submitting a
2 relief request will continue as licensees customize their
3 ISI and IST programs to best fit their specific plants.

4 Overall, we consider option 1 to provide the
5 greatest flexibility for licensees to minimize their burden
6 in implementing an effective ISI and IST program.

7 Next slide, please.

8 Regarding the fourth goal of making NRC activities
9 more effective, efficient, and realistic, we plan to improve
10 the ISI and IST updating process under option 1 by more
11 frequent endorsement of new code editions by applying
12 dedicated resources and revising the regulations.

13 Option 1 would also provide a consistent
14 application of 50.109 to ISI/IST updating, similar to other
15 new requirements.

16 Because the staff will continue to review future
17 code editions for endorsement and to review future relief
18 requests, we do not believe that any particular option would
19 result in significant NRC resource savings.

20 Next slide.

21 Further, on that same goal, we are encouraging
22 licensees to develop risk-informed ISI and IST programs and
23 also ASME to establish initiatives that might improve the
24 long-term approach for implementing those programs.

25 We will continue to participate in the code

1 process to help ensure that risk-informed initiatives are
2 successful.

3 With the customized ISI and IST programs currently
4 in place at individual plants, we do not believe that
5 modification of the updating process will significantly
6 affect the range of code editions applied at each plant.

7 Finally, any inconsistency that might arise
8 between NRC and state positions would be resolved by Federal
9 preemption.

10 Next slide, please.

11 In conclusion, we believe that option 1 best
12 addresses the four strategic outcome goals, and we propose
13 the 1995-96 code as the baseline, because it is the most
14 recent version endorsed in the regulation, and it does
15 include a number of improvements since the 1989 edition.

16 I'll be happy to answer any questions you might
17 have on our presentation.

18 CHAIRMAN MESERVE: Thank you very much.

19 As I understand the -- I'd like to have you
20 address the regulatory problem that you -- others have
21 argued that you create for yourself by this proposal.

22 The suggestion is maybe, as I understand your
23 proposal, perhaps as long as till 2055, there would be a --
24 what would be applicable would be the 1995 edition of the
25 ASME code, with segments of provisions drawn from successive

ANN RILEY & ASSOCIATES, LTD.
Court Reporters
1025 Connecticut Avenue, NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

1 codes that would be added in over time, so that, to the
2 extent that the ASME is trying to develop a unified
3 inter-related code by the process you'd involve, what you'd
4 require would be chunks of things that wouldn't be unified.

5 With licensees, if they want to get the benefit of
6 updated codes, come in and are required to take the entirety
7 of an updated code, so they have an entirely different set
8 of requirements than what you would otherwise require, or at
9 least to the extent that the ASME code is changing over
10 time, which, as we've heard, might be significant over a
11 period of many decades.

12 I just wonder whether you've -- you're not
13 creating a nightmare for yourself in evaluating plants and
14 in doing inspections with the fact that you have just chunks
15 of things drawn from various places that you're inspecting
16 against with many licensees perhaps deciding they want to
17 use updated codes, which could be several decades newer than
18 the baseline, and just -- you're creating an inconsistency
19 between plants, or among the plants, that seems to me just
20 greatly aggravates your problem of conducting your work, and
21 I wonder if you could comment.

22 MR. MIRAGLIA: Brian addressed that to some
23 extent, but in terms of -- I think what we have to recognize
24 is we looked at where plants are now with respect to codes
25 and the exemptions that are required and consistent with the

1 code changes.

2 We essentially have a number of customized plants
3 out there.

4 Brian also alluded to the fact that, at some point
5 in time, as these changes became significant in large
6 numbers, that there would have to be perhaps some
7 codification to say that the '95 update should be codified
8 to some greater extent, and Jack's had numerous experience
9 in this, so I'll let him give you the details.

10 MR. STROSNIDER: This answer may not be totally
11 satisfactory, but I've dealt with this issue from
12 headquarters and from the regional perspective. In fact, I
13 supervised the NDE van that was mentioned in some of the
14 earlier presentation.

15 The situation you're describing exists today, and
16 I say that that may not be very satisfying to hear that, but
17 the fact is, as we indicated, we have plants out there that
18 are operating with codes back as early as 1983.

19 Headquarters, in NRR -- we process about 300
20 relief or alternative requests a year, okay, and the outcome
21 of all that is that basically the ISI programs at the plants
22 are pretty much tailored to those plants, and when the
23 inspectors go out to look at them, it's very unlikely that
24 there's any two of them that look the same, and I say that
25 may not be very satisfying, and you say, well, how can I fix

1 that situation, and I'm not sure that there's an easy
2 solution to that.

3 Certainly, requiring updates every 10 years,
4 depending upon when a plant was licensed, is not going to
5 provide that kind of consistency, okay?

6 Understand that, you know, that 10-year update
7 occurs at different times for different people, they would
8 be addressing different codes, and as they look at the more
9 recent edition of the codes, they will -- if they see
10 something that's beneficial, they will request to use that
11 through the alternative or relief provisions of the code.

12 Similarly, we backfit -- we have required issues
13 be implemented -- or code activities be implemented on an
14 accelerated basis, depending upon the significance.

15 There was a lot of discussion this morning about
16 Appendix VIII, performance-based qualification of NDE, about
17 IWE/IWL inspections for containment.

18 Those provisions of the code were put through
19 backfit evaluations by the staff, and we required expedited
20 implementation of those, because they had significant safety
21 implications.

22 MR. MIRAGLIA: Can I add to that, Jack.

23 In terms of the two issues that Jack just raised,
24 those were raised as a result of operating experience.

25 The MOV issue was raised and the agency took

1 action to deal with the safety issue based upon operational
2 research experience.

3 That need for a codification of a uniform or
4 standard approach to address those issues were the impetus
5 for IWL/IWE issues.

6 I mean there's a number of processes out here in
7 terms of our regulatory processes that -- it's a mechanism
8 for feeding the need for code requirements.

9 MR. STROSNIDER: So, the response that the ISI
10 programs and the IST programs are these plants are somewhat
11 plant-specific, somewhat tailored to the plant based on
12 their age, based on their design -- it may not be totally
13 satisfactory, but that's the case.

14 If we could come up with a way to make it totally
15 consistent, you know, we'd do that, but I'm not sure that
16 there's really -- that that's really practical.

17 But as I did point out, maintaining 120-month
18 update provision or -- it's independent of whether you have
19 that provision or not.

20 CHAIRMAN MESERVE: But doesn't the proposal as
21 you've described it aggravate the situation in the sense
22 that there is this 10-year update requirement, and it may
23 well be that there are people at various stages in -- when
24 the update requirement triggers, but at least you're dealing
25 with a set of plants that are required to deal with a set of

1 codes that are reasonably contiguous in time, whereas what
2 you propose would have -- freeze 1995 with segments --
3 unless you do a total recodification and can justify that
4 through a backfit analysis -- that could extend on into the
5 future, so that over time you'd have a situation -- you'd
6 have even a greater disparity than you're observing today?

7 MR. STROSNIDER: The programs that we look at,
8 that have been submitted under the current requirements --
9 50 percent of the resources, 50 percent of the time in
10 reviewing those programs is looking at alternatives and
11 reliefs, where, in fact, the licensee may be updating to,
12 for example, the '89 edition of the code that's saying, you
13 know, I looked at a code case that was published in '95,
14 '96, '97, I looked at something in one of the more recent
15 editions of the code, and I want to use it, all right?

16 That provision will remain there.

17 Now --

18 MR. MIRAGLIA: The answer to the question, Mr.
19 Chairman, I think, is what we're saying, everybody needs to
20 re-baseline against, in the staff's proposed option, to the
21 '95 with the '96 addenda.

22 What the reality is, is everyone would look at
23 that and Jack would indicate there would probably be a
24 number of exceptions or reliefs from that to permit
25 plant-specific exemption requests because of configurations

1 in the plants, for accessibility of welds, and so, it would
2 get everybody up to almost the same place, but with time,
3 you're right, without another re-baselining, we would have
4 -- and then we'd essentially be in the circumstances we are
5 today with the current implementation.

6 MR. STROSNIDER: I'm not convinced that we would
7 see a whole lot more relief requests and alternative
8 requests than we currently see, because we see a lot now.

9 CHAIRMAN MESERVE: I'd like to ask you a question
10 about your slide seven, which is -- as drafted -- you said
11 it a little different orally -- is that option 1 was
12 perceived to -- will increase public confidence by applying
13 backfit, option 2 may increase public confidence, and I'd
14 just make the observation that you've created a -- your
15 proposal would create a barrier to updating through the
16 sense that you have to do a backfit justification before
17 applying the more modern ASME code, and it's not clear to
18 me, particularly given the fact that we have an ACRS letter
19 that's been submitted to us, that going to option 1, as
20 you've described it, will increase public confidence.

21 MR. SHERON: I think "may" is a better word. I
22 don't think we have anything that would say -- we're that
23 positive.

24 CHAIRMAN MESERVE: As opposed to option 2 versus
25 option 1, which one do you think would have the greatest

1 public confidence?

2 MR. SCARBROUGH: We were thinking there that, in
3 this case, by being consistent, the consistency, so that it
4 would show that the NRC is applying new requirements in an
5 organized fashion consistently across the board for all new
6 requirements.

7 MR. MIRAGLIA: I think it goes to everybody
8 re-looking at the '95-'96 and making a conscious decision as
9 to what applies versus not, and in the near term, that might
10 have a little stronger, but I think, with time, "may" is
11 probably the better word.

12 MR. STROSNIDER: But I do think one of the
13 difficulties when people are looking at option 1 is they're
14 reading as far as eliminating mandatory updates and they're
15 not reading the rest of the proposal, which says, where
16 there are safety significant changes that we can -- that we
17 feel need to be implemented, that we will do that, okay, and
18 you have to ask yourself the question with the current
19 process.

20 If you have people operating to the 1983 edition
21 of the code, if that were really the case, does that provide
22 confidence?

23 In reality, okay, because of other backfit
24 processes and generic letters and other things that we've
25 done, those people are using -- those plants are using much

1 more recent things, but like I said, I think the important
2 thing when we look at option 1 is not to over -- to lose
3 sight of the fact that we are talking about implementing,
4 mandating those aspects of the code, like Appendix VIII,
5 like the containment inspection, IWE/IWL, not in 10 years,
6 all right, but on an expedited schedule.

7 CHAIRMAN MESERVE: I'm misunderstanding something
8 in what you're proposing. We currently require compliance
9 subject to this 10-year update, and the current rule puts us
10 to the 1995 code.

11 What we're considering now is the question of
12 whether, for future -- whether that's every -- going to be
13 amended every 10 years automatically or whether we apply a
14 backfit requirement to this.

15 What I'm failing to understand is how, given the
16 issue that's before us, how that's going to bring us to
17 greater consistency among the plants than our current rule.
18 I mean it seems to me that it doesn't.

19 MR. SHERON: It wasn't intended to --

20 CHAIRMAN MESERVE: I thought I heard you saying
21 that that was one of the things, that we would benefit from
22 this, it would bring everyone up to the '95 level. Well,
23 that's where we are regardless.

24 MR. MIRAGLIA: I think it would say -- what the
25 rule would say is that that would be the mandatory baseline

1 that everybody has to start from, and then they have to look
2 at their programs versus that.

3 MR. STROSNIDER: It would bring them to a minimum
4 level.

5 We're not suggesting that there's going to be
6 consistency.

7 As I said earlier, when you look at the
8 plant-specific aspects --

9 MR. MIRAGLIA: Some of them are probably already
10 there.

11 MR. STROSNIDER: That's a very difficult thing to
12 achieve, that sort of consistency.

13 CHAIRMAN MESERVE: Commissioner Dicus?

14 COMMISSIONER DICUS: Following up a little bit on
15 that -- and perhaps you went into this, and if you did, I
16 missed it or it wasn't that clear to me.

17 If we were to backslide, as the Chairman
18 mentioned, which we're -- I don't think we're going to do
19 that, but if we looked at the differences in the last 10
20 years in the codes, what number or how many of them reached
21 the importance level that they would meet the 50.109 test?

22 MR. SCARBROUGH: The ones that we did were
23 Appendix VIII, because when we endorsed -- when we were
24 thinking about doing the endorsement, that was going to be
25 accelerated. That was an accelerated implementation for

1 that in this most recent code.

2 So, we know that for sure, and so, that would be
3 what we would consider something to be accelerated.

4 Now, we would have to look at -- there's been a
5 lot of talk about the comprehensive pump test.

6 COMMISSIONER DICUS: Right.

7 MR. SCARBROUGH: We'd have to look at it more
8 carefully and see if that might be one.

9 We didn't look at that at the time we were
10 endorsing the '95 code.

11 The only one that really stood out as meeting the
12 109 test was the one on Appendix VIII.

13 MR. STROSNIDER: But I'd also point out that the
14 endorsement requirement to implement IWE/IWL containment
15 inspections, which was a separate rule-making, was also put
16 through the backfit process and done not on a 10-year
17 schedule but on an expedited schedule.

18 MR. SHERON: The approach right now -- I mean when
19 we were reviewing codes for endorsement in 50.55(a), we
20 obviously in the past have not been looking at them from the
21 standpoint of the backfit rule, because we recognize that we
22 said, you know, it doesn't apply in this case, therefore, we
23 don't need to look at it and make that case.

24 Except in situations where there are substantial
25 increases in requirements, new requirements, those have to

1 go through the backfitting process, and as you heard, we put
2 those through the backfit process, and they, indeed, passed,
3 and they were implemented, IWE/IWL.

4 COMMISSIONER DICUS: Okay.

5 MR. SHERON: So, to answer your question, I don't
6 think we have looked to say, had we compared the '95 edition
7 to the '89 edition, how many of those items, notwithstanding
8 IWE/IWL and Appendix VIII, how many of those would have
9 actually passed the substantial increase in safety test. We
10 just haven't done that.

11 COMMISSIONER DICUS: Okay.

12 One quick question, because we are on a time
13 crunch here.

14 It gets into the issue, if we did keep the rule as
15 it stands, and every 10 years, or thereabouts, when there's
16 an update, but in the meantime, if ASME identified something
17 critical enough to bring to our attention, can't we go
18 through the 50.109 process?

19 MR. MIRAGLIA: Yes.

20 COMMISSIONER DICUS: So, we can continue to do
21 this, even if we keep the 10-year rule.

22 MR. MIRAGLIA: The IWL/IWE process is one to show
23 that we didn't wait for the 10 years.

24 The other thing in terms of backfitting, you know,
25 we keep -- if there is any safety issue that we feel needs

1 adequate protection, we can do that at any time, and the
2 backfit is for enhancements issues, and so, what we're
3 talking about here within the code is our role in that
4 enhancement-type issue, perhaps a clarification in terms of
5 what is required to comply with the code.

6 MR. SHERON: But I think what we're saying is that
7 we don't really -- as I think Mr. Beedle said, okay, if -- a
8 lot of improvements that were made in the code were
9 basically editorial, okay, in nature, and the like, you
10 know, and to have to have them translate that into their
11 manuals and so forth and retrain their tech staff and the
12 like, where you really can't identify a safety basis for it,
13 what we're saying is we don't believe that's appropriate for
14 the NRC staff to have to require that, okay?

15 Utilities can do that at their option, if they
16 feel it's something they want to do, but we basically are
17 saying we want to focus on those aspects of the code that
18 enhance safety, okay, and those are the ones we will decide
19 if it's necessary and then we will backfit them to be
20 implemented, you now, and we won't wait 10 years, we're
21 going to do it right then, okay, on an expedited basis.

22 CHAIRMAN MESERVE: Commissioner Diaz?

23 COMMISSIONER DIAZ: I think a lot of the things
24 have been asked, but I just want to make a comment.

25 I don't think that editorial changes provide a

1 great burden.

2 I mean if they do, then there's something wrong in
3 the process.

4 They provide a slight burden but not a significant
5 burden.

6 I mean the burden is on those things that are
7 really, you know, either safety significant or provide a
8 change in the process.

9 Having said that, a quick question.

10 Are there improvements in regulatory stability and
11 in consistency of the application of the regulatory programs
12 by maintaining the 120-month upgrade?

13 MR. SHERON: I would answer -- and I think we
14 touched on that -- and that is that, you know, as plants
15 come into their update -- and I was just checking with the
16 staff, and my understanding is that, if you plotted the
17 anniversary date, okay, as a function of time, you would see
18 basically a sine-wave moving through the system, okay, where
19 there's a whole group of plants that got licensed around the
20 same time. So, their anniversary date is around that time,
21 you know, and then there's -- but there's tails, okay, that
22 will have different anniversary dates.

23 But given that, combined with, as Jack said, that
24 we get about 300 relief requests a year, which is about --
25 translates to about maybe -- what is that? -- three per

1 plant, okay, that each plant basically winds up with a
2 customized ISI/IST program anyway, okay, and then we have a
3 bunch of plants that we hope are going to start taking
4 advantage of the risk-informed ISI/IST, which means they're
5 going to move right out of that whole, you know,
6 deterministic approach with the code and use a different
7 approach, and they're not going to be in a 10-year program
8 anymore.

9 So --

10 MR. STROSNIDER: I would add one other
11 clarification here, just because I want to make sure it's --
12 give a fair evaluation of that.

13 There are some aspects of the code, such as the
14 qualification of personnel -- and UT examiners was
15 mentioned, okay, which that would be more uniform, all
16 right, of course, and I would go back and point out again
17 that that's another one that we captured with Appendix VIII,
18 okay.

19 So, people -- you'd have more uniformity from that
20 perspective.

21 When you talk about which actual welds you're
22 looking at and that sort of thing, that consistency is
23 difficult to --

24 MR. SHERON: That would be captured through a
25 backfit, right?

1 MR. STROSNIDER: Yes.

2 COMMISSIONER DIAZ: It appears it might be a more
3 fundamental problem with this issue than the upgrades in the
4 codes, and with that, I yield the rest of my time, which is
5 about five seconds.

6 COMMISSIONER MCGAFFIGAN: The issue of -- the
7 slide that the Chairman talked about, increasing public
8 confidence -- I think you do have it entirely wrong.

9 I would just say that our European colleagues
10 think we're sort of nuts to have a backfit rule to start
11 with, and I think they backfit whenever they see a benefit
12 commensurate with the cost, and they don't have the
13 substantial benefit test.

14 So, the public -- and from my experience, the
15 public interest folks and the CSAS process -- if you're
16 talking -- if by "public," you mean David Lochbaum and
17 Riccio and company, the backfit rule is not -- and the
18 consistent application of it -- is not the first thing that
19 leaps to their mind in building their confidence.

20 MR. MIRAGLIA: But it relates to and it grew from
21 a concern by the regulated industry that we didn't have
22 regulatory stability and that there needed to be a baseline
23 from which to measure. So, I mean there's arguments on both
24 sides of that.

25 COMMISSIONER MCGAFFIGAN: To continue on this

1 backfit issue, Frank, you've been involved in the fitness
2 for duty paper.

3 I don't know whether the other folks at the table
4 are, but you've been involved in it, and you know how much
5 work has gone into --

6 MR. MIRAGLIA: Yes, sir.

7 COMMISSIONER McGAFFIGAN: -- over five years or
8 six years --

9 MR. MIRAGLIA: Yes, sir.

10 COMMISSIONER McGAFFIGAN: -- every provision of
11 that, looking at whether it passes a substantial benefit
12 test, coming to the conclusion that many of them did --

13 MR. MIRAGLIA: And that issue --

14 COMMISSIONER McGAFFIGAN: -- asking us for 31
15 worthwhile exceptions to backfit.

16 Aren't you setting yourself up in this to end up
17 doing the same darn thing?

18 You're going to have to look at a complex code,
19 you're going to have to look at it piece by piece, you're
20 going to have to parse it, in the end the end the staff may
21 -- the ACRS representative was saying you're going to have a
22 hard time, you know, on a cost-benefit basis to justify some
23 of this.

24 MR. MIRAGLIA: Well, I think --

25 COMMISSIONER McGAFFIGAN: It's a qualitative

1 argument.

2 I can imagine the future papers on the ASME code
3 and a fitness-for-duty paper yay thick.

4 MR. MIRAGLIA: The only analogy that I would
5 submit in that case is the fitness for duty and the
6 application of the backfit rule have that commonality.

7 I think, in the code cases here, we have applied
8 the backfit rule to implement changes in the code prior to
9 the -- so, can we do it and is there a basis to make
10 quantitative arguments?

11 I think we've demonstrated that in a number of
12 instances.

13 In terms of the fitness for duty, the policy issue
14 that came to the Commission is that the Commission had asked
15 the staff to go back and look at the fitness-for-duty rule
16 after two years of implementation and suggest changes. That
17 came up, and the staff originally looked at the changes in
18 an aggregate.

19 If you look at all of these changes and what the
20 pluses and minuses, it would go forward.

21 COMMISSIONER MCGAFFIGAN: With the
22 fitness-for-duty paper fresh in mind and Brian Sheron's
23 comment that, maybe in 15 years, we might want to endorse a
24 code case in its entirety, I certainly don't want to be here
25 when that paper comes to us, because I do think, if you --

1 MR. MIRAGLIA: Well, I certainly won't be here.

2 COMMISSIONER MCGAFFIGAN: If the backfit rule is
3 applied the same way to that process as it was applied to
4 the fitness-for-duty process, God forsake the trees in the
5 forest of this country -- God help the trees in the forest.

6 I'll pass.

7 CHAIRMAN MESERVE: Mr. Merrifield.

8 COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman.

9 I have to say to Commissioner McGaffigan, this
10 morning, in discussing this with my staff, I had the exact
11 same reaction to the fitness-for-duty rule. So, you're not
12 alone in that one.

13 I guess my one question for the staff is -- you
14 know, we talked in the last panel and I asked some questions
15 relative to what I would term the NEI benefit test.

16 You stated in your clarifications that, as you see
17 it, you know, we're going to fix ourselves with the '95
18 changes, and then, as we go forward, 20 years down the road,
19 if NEI or one of its members said, gee, we want -- we kind
20 of like the 2010 version relative to these couple of changes
21 here.

22 You basically said, well, if you're in for a
23 penny, you're in for a pound.

24 If you want those changes, you've got to be
25 willing to adopt that whole package.

1 Is that --

2 MR. SHERON: No.

3 COMMISSIONER MERRIFIELD: No. Okay.

4 MR. SHERON: Well, you can do it either that way
5 -- if you adopt the entire package and if that package has
6 been endorsed by the staff, then --

7 COMMISSIONER MERRIFIELD: I'm saying in the
8 absence of endorsement.

9 MR. SHERON: Okay.

10 In the --

11 COMMISSIONER MERRIFIELD: Let's say we have
12 affixed it.

13 MR. SHERON: Right.

14 COMMISSIONER MERRIFIELD: We have not changed our
15 baseline, it remains a '95 baseline, but that an individual
16 utility wants to take the benefit of changes relative to a
17 2010 version.

18 MR. SHERON: They can come in and request through
19 the relief process that those two -- and we would evaluate
20 them, and if we believe that --

21 MR. MIRAGLIA: I think there's two issues here.

22 In terms of -- we will look at new codes and
23 endorse codes but not say that they're mandatory.

24 If they want to implement that endorsed code, they
25 have to take the whole thing, and we're going to endorse

1 those code changes on a more expedited basis.

2 COMMISSIONER MERRIFIELD: So, if I'm a utility and
3 we're all subject to the '95 code and the Commission has not
4 adopted an update to that, I mean in terms of requiring an
5 update, and utility X says, gee, there's this one change in
6 the 2010 code that I like, you're saying they have to come
7 in and they have to adopt the entirety of that.

8 MR. MIRAGLIA: No. They could adopt the whole
9 code without coming to us.

10 COMMISSIONER MERRIFIELD: What do they have to do
11 to get that change?

12 MR. STROSNIDER: The proposal is, if we, 20 years
13 down the road, have endorsed the 2010 code and a licensee
14 wants to accept it in its entirety, they could do that
15 without coming to us.

16 We'd want them to tell us, but they don't need our
17 approval.

18 They could do it, we've already endorsed it, go
19 take the whole thing.

20 If they see one piece of it that they like and
21 they don't want to take the whole thing, then they would
22 come under -- they would come into the NRC under the
23 existing provisions and request an alternative to whatever
24 code they were baselined at, and we would review that and
25 determine whether it was an acceptable alternative.

1 COMMISSIONER MERRIFIELD: Okay.

2 Just so this is clear, they could say we only want
3 that one change from 2010 and submit that to the agency.
4 They wouldn't be required to take the whole thing.

5 MR. STROSNIDER: The difference is we would review
6 it.

7 What we're saying they can't do is go cherry-pick
8 from the 2010 code without NRC reviewing what they're
9 picking, and Mr. Perry pointed out that there has to be --
10 you know, when you look at the code, you've got to make sure
11 you're picking up all the relevant portions, and that's the
12 sort of thing we would be looking at.

13 COMMISSIONER MERRIFIELD: That's my only question,
14 Mr. Chairman.

15 The only thing I would say is you had a line of
16 questioning on this panel in which you stated that what we
17 are perhaps faced with -- you know, we're affixing to '95 --
18 is we may have the potential, at least, for having more
19 changes out there and a lot more variation down the line if
20 we maintain this '95 standard, and I have to say I share
21 your concern about that.

22 We are at a point in this agency where we are
23 asked to be more user-friendly.

24 We're also asked to reduce our costs, and I think,
25 you know, this may be one of those cases where trying to

1 meet both of those and have regulatory predictability and
2 have confidence of our stakeholders may be coming into
3 conflict. I think we need to think hard about this one.

4 Thank you, Mr. Chairman.

5 CHAIRMAN MESERVE: I'd like to thank the staff and
6 our earlier panel, as well, for a very helpful presentation
7 this morning, and with that, we're adjourned.

8 [Whereupon, at 11:33 a.m., the meeting was
9 concluded.]

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

CERTIFICATE

This is to certify that the attached description of a meeting of the U.S. Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING ON EVALUATION OF THE
REQUIREMENT FOR LICENSEE TO UPDATE
THEIR INSERVICE INSPECTION AND
INSERVICE TESTING PROGRAM EVERY 120
MONTHS -- PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Friday, March 24, 2000

was held as herein appears, is a true and accurate record of the meeting, and that this is the original transcript thereof taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company.

Transcriber: Tamara Shipp

Reporter: Mike Paulus

Proposed Rulemaking on the Elimination of the 120- Month Update Requirement

March 24, 2000

Ralph Beedle, NEI



1

Proposed Rulemaking

- Codes and Standards
- Elimination of the 120-Month Update Requirement



2

Codes & Standards

- Standards Development
 - Positive contribution
 - Consensus process
 - Maintain balance of interest
 - Value to end users
 - Continued industry participation



3

Codes & Standards

- Public Law 104-113
 - Encourage federal agencies to benefit from private sector initiatives
 - Reduce reliance on government-unique standards



4

Codes & Standards

- NRC endorses approx. 4000 codes and standards
- 20 standards are mandated by regulation
- NRC rulemaking not timely or flexible
- NRC imposes limitations and modifications



5

Proposed Rulemaking

- Voluntary updates of entire editions and addenda
- Any of the options will maintain an “acceptable level of safety”
- Code changes “not necessarily justified compared with costs imposed on licensees”



6

Proposed Rulemaking

- Backfitting Rule Implications
 - Safety significance
 - Cost of implementation
- Eliminate the 120-month requirement
- Baseline the 1989 Edition of the ASME Code
- Sound regulatory policy



7

Proposed Rulemaking

- Option 1B
 - Unnecessary regulatory requirement
 - No demonstrated safety benefit
 - Unnecessary expenditure of resources - additional 10 year cycle
- Recommend Commission adopt Option 1A



8

EVALUATION OF REQUIREMENT FOR LICENSEES TO UPDATE INSERVICE INSPECTION & INSERVICE TESTING PROGRAMS EVERY 120 MONTHS

March 24, 2000

**Brian W. Sheron
Jack R. Strosnider
Thomas G. Scarbrough**

NRC Office of Nuclear Reactor Regulation

OVERVIEW

- **Licensees required to update ISI/IST programs every 120 months to ASME Code incorporated in 10 CFR 50.55a.**
- **Licensees suggested automatic updating of ISI/IST programs not needed to maintain safety and causes unnecessary burden.**
- **NRC staff obtained stakeholder comments.**
- **NRC staff recommends periodic ISI/IST updating using 10 CFR 50.109.**

CURRENT ISI/IST UPDATING APPROACH

- **NRC regulations require licensees to update ISI/IST programs to 1995/1996 Code at next 120-month interval.**
- **Current approach may result in use of outdated Codes unless accelerated implementation mandated.**
- **IST programs applying 1983 edition at 5 reactor units, 1986 edition at 18 units, and 1989 edition at 81 units.**
- **Some plants applying Code provisions 17 years old without adverse safety impact.**

MILESTONES

- **April 27, 1999: Proposed rule.**
- **May 27, 1999: Public workshop.**
- **June 24, 1999: Staff directed to complete endorsement of 1995/1996 ASME Code.**
- **September 22, 1999: Final rule published incorporating 1995/1996 ASME Code.**
- **January 14, 2000: SECY-00-0011.**
- **February 8, 2000: ACRS recommendation to retain ISI/IST update requirement.**

OPTIONS

- 1. Replace ISI/IST update requirement with baseline Code and allow voluntary updating unless more recent baseline Code mandated per 10 CFR 50.109.**
 - A. 1989 Edition; 1992/1992 Class MC and CC; 1995/1996 Appendix VIII for ultrasonic qualification,**
 - B. 1995/1996 ASME Code, or**
 - C. 1998 Edition of ASME Code.**
- 2. Retain ISI/IST update requirement.**
- 3. Retain ISI/IST update requirement and develop guidance for plant-specific alternatives.**

MAINTAINING SAFETY

- **Each option maintains safety by updating ISI/IST programs based on specific criteria.**
- **Endorsement of 1995/1996 Code recognizes improvements since 1989.**
- **Option 1 will endorse future Code editions for voluntary use and require updating based on 50.109.**
- **Importance of Code maintained by timely endorsement of new baseline Code editions.**
- **Updating process will assess program adequacy.**

INCREASING PUBLIC CONFIDENCE

- **Option 1 will increase public confidence by applying 50.109 to ISI/IST updating consistent with other new requirements for operating reactors.**
- **Option 2 may increase public confidence by requiring updating to latest Code regardless of safety significance.**
- **Option 3 might decrease public confidence by limited public participation in approval of alternatives.**

REDUCING UNNECESSARY BURDEN

- **Updating an ISI/IST program can cost over \$1 million per plant.**
- **Under Option 1, licensees required to update ISI/IST programs only when Code improvements satisfy 50.109.**
- **Costs of submitting relief requests will continue.**
- **Option 1 provides greatest flexibility for licensees to minimize burden.**

MAKING NRC ACTIVITIES MORE EFFECTIVE, EFFICIENT, AND REALISTIC

- **Staff will improve ISI/IST updating process under Option 1 by more frequent Code endorsement.**
- **Option 1 will provide consistent application of 50.109 to ISI/IST updating similar to other new requirements for operating reactors.**
- **No option would result in significant NRC resource savings.**

MAKING NRC ACTIVITIES MORE EFFECTIVE

(CONTINUED)

- **Staff encouraging risk-informed programs and Code initiatives to improve long-term ISI/IST approach.**
- **Staff participates in Code process.**
- **Modification of updating process will not significantly affect range of applied Code editions.**
- **Any inconsistency in NRC and State positions resolved by federal preemption.**

RECOMMENDATION

- **Option 1.B best addresses strategic outcome goals.**
- **1995/1996 Code baseline selected because most recent version in regulations and improvements since 1989.**

**Commission Briefing By ASME
On
Evaluation of Requirements for Licensees to
Update Their ISI/IST Programs**

**March 24, 2000
Rockville, Maryland**

By

**James A. Perry, PE
Past VP Nuclear Codes & Standards**



Benefits Outweigh Costs

- **Updating focuses on evaluation of entire program, identifies deficiencies & forms the basis for making corrections & enhancements to ISI/IST Programs**
- **Average costs of ISI update \$200,000**
- **NRC mandated one-time costs add significantly to total, for example containment inspection (IWE/IWL) & Appendix VIII**
- **Review fees add to costs incurred for exceptions & relief requests required to use Code Cases or rules from later editions of the code**



ASME Codes Are Living Documents

- **Changes result from new or improved inspection/test/materials/design methodologies**
- **Changes reflect lessons learned from over 30 years of nuclear operational experience**
- **Codes moving from prescribed repetitive inspections & tests to more risk-informed and performance-based approaches**
- **Numerous changes have occurred since the 1989 edition that improve safety including reducing radiation exposure, improve industry standards, reduce burden, and respond to inquiries and user feedback**



ASME Code Changes 1989 to 1999

Change Categories	<u>BPV Section XI</u>		<u>OM Code</u>	<u>Total</u>
	<u>Primary Basis</u>	<u>Secondary Basis</u>		
IS	10	2	3	15
IIS	124	8	18	150
RRE	1	24	4	29
RR	29	6	8	43
M	<u>91</u>	<u>1</u>	<u>18</u>	<u>110</u>
Total	255	41	51	347

IS-improved safety; IIS-improved industry standard; RRE-reduced radiation exposure; RR-reduced requirements; M-maintenance



ASME Consensus Process and Use of Volunteers

- **Broad-based balanced group of experts produce Code changes (30% utilities, 30% consultants, 40% include enforcement/regulatory, manufacturers, & inspection from insurance companies)**
- **Multiplier Effect**
- **Consensus Process Used in All ASME Codes and Standards**



Negative Impact of Deleting Update Requirement

- **The current proven process would be replaced by one that introduces many unknowns and uncertainties**
- **Evaluation & reports to OMB would cause increased burden on NRC staff**
- **By NRC applying only selected parts of different code Editions on licensees, confusion is created regarding proper overall implementation and maintenance of ISI/IST Programs**
- **Proposed rulemaking creates greater inconsistencies between federal and state requirements that would have a negative impact on Code users**



Conclusion

Keeping the 120 month update maintains the stable system which works to provide an integrated approach to safety improvement and burden reduction





UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555-0001

March 17, 2000

MEMORANDUM TO: Annette L. Vietti-Cook
Secretary

FROM:


John T. Larkins, Executive Director
Advisory Committee on Reactor Safeguards

SUBJECT:

BRIEFING ON EVALUATION OF THE REQUIREMENT FOR
LICENSEES TO UPDATE THEIR INSERVICE INSPECTION AND
INSERVICE TESTING PROGRAMS EVERY 120 MONTHS -
MARCH 24, 2000

Dr. William Shack, ACRS Member, is scheduled to brief the NRC Commissioners on March 24, 2000, between 9:30 and 11:30 a.m. concerning the proposed amendment to 10 CFR 50.55a to eliminate the requirement for licensees to update their inservice inspection and inservice testing programs every 120 months. Presentation materials related to this briefing are attached.

Attachment: As stated

cc: ACRS members
ACRS staff

**PROPOSED AMENDMENT TO ELIMINATE
REQUIREMENT TO UPDATE ISI AND IST
PROGRAMS EVERY 120 MONTHS**

**Dr. William J. Shack
Advisory Committee on Reactor Safeguards**

March 24, 2000

ACRS RECOMMENDATIONS AND OBSERVATIONS

- Retain the 120 month update requirement in 10 CFR 50.55a
- Arguments are made as to the maturity of the process, but significant changes have been made to the ASME Code over the past 120 months that the staff has recognized need to be included in their proposed baseline for Option 1.
- Inspections are crucial part of aging management programs for license renewal.
- ASME provides a peer review of inspection requirements and as such increases confidence of stakeholders in effectiveness of inspections.

ACRS RECOMMENDATIONS AND OBSERVATIONS

- In License Renewal applications applicants are evaluating effects that are not presently addressed by the ASME code and developing site-specific aging management programs. Efficiencies may be added to the staff review process if ASME codifies acceptable methods for developing aging management programs.
- 10 CFR 50.109 is not well suited to assess the appropriateness of "structuralist" defense-in-depth requirements
- Industry requests more timely NRC endorsement of ASME Code revisions and Code Cases



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555-0001

February 8, 2000

The Honorable Richard A. Meserve
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Meserve:

SUBJECT: SECY-00-0011, "EVALUATION OF THE REQUIREMENT FOR LICENSEES TO UPDATE THEIR INSERVICE INSPECTION AND INSERVICE TESTING PROGRAMS EVERY 120 MONTHS"

During the 469th meeting of the Advisory Committee on Reactor Safeguards, February 3-5, 2000, we discussed the NRC staff's analysis of ACRS comments and recommendations regarding the 120-month update requirement for inservice inspection (ISI) and inservice testing (IST) programs, which is included in SECY-00-0011 and also in a January 13, 2000, memorandum from the NRC Executive Director for Operations. The staff continues to recommend that the update requirement be eliminated from 10 CFR 50.55a, "Codes and standards." If the update requirement is eliminated, any subsequent NRC-imposed update of Section XI of the American Society of Mechanical Engineers (ASME) Code would be subject to a backfit analysis in accordance with 10 CFR 50.109, "Backfitting."

We continue to recommend that the Commission adopt Option 2 proposed by the staff in SECY-00-0011 and retain the 120-month update requirement for ISI and IST programs in 10 CFR 50.55a.

The assurance of the integrity of the reactor coolant pressure boundary and the containment is one of the cornerstones of the NRC regulatory system. The license renewal process is predicated on the demonstration that any effects of aging on critical plant systems will be adequately managed. Effective ISI and IST programs are crucial to this demonstration and to public confidence in the license renewal process. Because of this, we believe that the ISI and IST standards are different from other industry standards for which there is no mandatory update requirement.

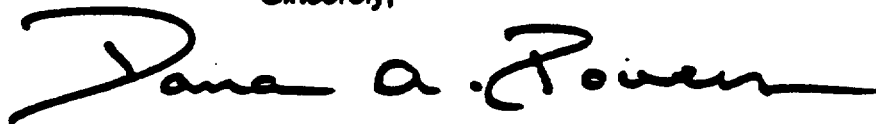
In support of Option 1 in SECY-00-0011, the Nuclear Energy Institute (NEI) and the staff argue that the current ASME Code requirements have reached such a level of maturity that further updating will provide little benefit. We believe that the review of the past decade of experience presented to us by the ASME demonstrated that there were significant changes to the ISI, IST, and operations and maintenance requirements that improved the effectiveness and efficiency of these programs. Indeed, both the staff and NEI recognized that the 1989 version of the Code would have to be updated to include requirements from the 1992, 1995, and 1996 versions of the Code to be considered as an acceptable baseline. The staff and NEI arguments would be

more convincing if they could identify a decade in which significant changes had not been made in the Code. Changes in the Code reflect the latest knowledge and experience in inspections and testing and sometimes provide relief from existing requirements.

Changes are not introduced into the ASME Code requirements frivolously. Approximately 30% of the Section XI membership are representatives of licensees. They have a very good understanding of the impact of any proposed changes on their operations. Any proposed changes are subject to peer review by a broad-based group of experts from the licensees, manufacturers, vendors, the NRC, and other engineering and consulting organizations. If the update requirement is eliminated, the staff may be required to demonstrate to the public, including State officials, why requirements in consensus standards should not be adopted.

Under Option 1, any mandated updates to the ISI and IST programs would have to pass the 10 CFR 50.109 backfit criteria. In SECY-00-0011, the staff argues that it can make qualitative assessments to demonstrate a substantial increase in the overall protection of the public health and safety. We continue to believe that 10 CFR 50.109 evaluations are not well suited to assess the appropriateness of defense-in-depth measures, such as the ASME Code updates. Effective ISI and IST programs based on a broad technical consensus standard are prudent to provide confidence that the effects of aging are adequately managed.

Sincerely,



Dana A. Powers
Chairman

References:

1. SECY-00-0011, memorandum dated January 14, 2000, from William D. Travers, Executive Director for Operations, NRC, for the Commissioners, Subject: Evaluation of the Requirement for Licensees to Update Their Inservice Inspection and Inservice Testing Programs Every 120 Months.
2. Letter dated January 13, 2000, from William D. Travers, Executive Director for Operations, NRC, to Dana A. Powers, Chairman, ACRS, Subject: Draft Commission Paper Regarding 120-Month Update Requirement for Inservice Inspection and Inservice Testing Programs.
3. ACRS letter dated December 8, 1999, from Dana A. Powers, Chairman, ACRS, to the Honorable Richard A. Meserve, Chairman, NRC; Subject: Draft Commission Paper Regarding the 120-Month Update Requirement for Inservice Inspection and Inservice Testing Programs.
4. ACRS letter dated May 19, 1999, from Dana A. Powers, Chairman, ACRS, to the Honorable Shirley A. Jackson, Chairman, NRC, Subject: The Role of Defense in Depth in a Risk-Informed Regulatory System.
5. Memorandum dated June 24, 1999, from Annette L. Vietti-Cook, Secretary of the Commission, to William D. Travers, Executive Director for Operations, NRC, Subject: Staff Requirements - Reconsideration of SECY-99-017 (Proposed Amendment to 10 CFR 50.55a).

6. Letter dated April 19, 1999, from Dana A. Powers, Chairman, ACRS, to William D. Travers, Executive Director for Operations, NRC, Subject: SECY-99-017, "Proposed Amendment to 10 CFR 50.55a."
7. Table provided by ASME during ACRS meeting, December 2-4, 1999, "Important Section XI SG NDE Code Changes and Code Cases, 1989 Addenda through 1999 Addenda," Revision 2, November 1, 1999.
8. Memorandum dated November 12, 1999, from Ashok C. Thadani, Office of Nuclear Regulatory Research, NRC, to John T. Larkins, ACRS, Subject: Generic Safety Issue 190, "Fatigue Evaluation of Metal Components for 60-Year Plant Life."



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555-0001

December 8, 1999

The Honorable Richard A. Meserve
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Meserve:

SUBJECT: DRAFT COMMISSION PAPER REGARDING THE 120-MONTH UPDATE REQUIREMENT FOR INSERVICE INSPECTION AND INSERVICE TESTING PROGRAMS

During the 468th meeting of the Advisory Committee on Reactor Safeguards, December 2-4, 1999, we reviewed the options proposed by the staff regarding the current requirement for licensees to update inservice inspection (ISI) and inservice testing (IST) programs every 120 months to the most recent Edition of the American Society of Mechanical Engineers (ASME) Code incorporated by reference in 10 CFR 50.55a, "Codes and Standards." Our Subcommittee on Materials and Metallurgy also reviewed this matter during its meeting on December 1, 1999. During this review, we had the benefit of discussions with representatives of the NRC staff, ASME, and the Nuclear Energy Institute (NEI). We also had the benefit of the documents referenced.

Recommendation

We recommend that the Commission adopt Option 2 proposed by the staff and retain the 120-month update requirement for ISI and IST programs in 10 CFR 50.55a.

Background

The staff issued a proposed amendment to 10 CFR 50.55a on April 27, 1999, to solicit public comment on a proposal to eliminate the current requirement that licensees update their ISI and IST programs every 120 months to the most recent edition of the ASME Code incorporated by reference in 10 CFR 50.55a. In a letter dated April 19, 1999, we recommended against eliminating this requirement. The NRC staff held a public workshop on May 27, 1999, to discuss the update requirement. In a Staff Requirements Memorandum dated June 24, 1999, the Commission directed the staff to evaluate public comments on the update requirement and develop options and recommendations on the retention or elimination of this requirement. The Commission also directed the staff to discuss this issue further with the ACRS.

The staff has identified three options:

OPTION 1: Replace the 120-month ISI/IST update requirement with a baseline of ISI and IST requirements, and allow voluntary updating to subsequent NRC-approved Code editions and addenda unless the baseline is revised based on 10 CFR 50.109, where the initial baseline will consist of:

- Option 1.A.** the 1989 Edition of the ASME Code for ISI of Code Class 1, 2, and 3 components (including supports) and for IST of Code Class 1, 2, and 3 pumps and valves; the 1992 Edition with the 1992 Addenda of Subsections IWE and IWL of the ASME Code for ISI of Class MC and Class CC components and their integral attachments; the 1995 Edition with the 1996 Addenda of Appendix VIII of the ASME Code, Section XI, with limitations and modifications specified in 10 CFR 50.55a,
- Option 1.B.** the 1995 Edition with the 1996 Addenda of the ASME Code with the limitations and modifications specified in the NRC regulations, or
- Option 1.C.** a later version (e.g., the 1998 Edition) of the ASME Code with appropriate limitations and modifications.

OPTION 2: Retain the current 120-month ISI/IST update requirement.

OPTION 3: Authorize plant-specific alternatives to the 120-month ISI/IST update requirement.

Discussion

The staff evaluated the update options in terms of the strategic goals of the Commission: (1) maintaining safety, (2) increasing public confidence, (3) reducing unnecessary regulatory burden, and (4) making NRC activities and decisions more effective, efficient, and realistic. Although the staff concludes that no particular option has an overwhelming advantage over the other options, it recommends the adoption of Option 1B, which eliminates the mandatory 120-month update. We believe that the later version of the ASME Code would provide technically superior baselines for the ISI and IST programs than the 1989 Edition, which is now over ten years old.

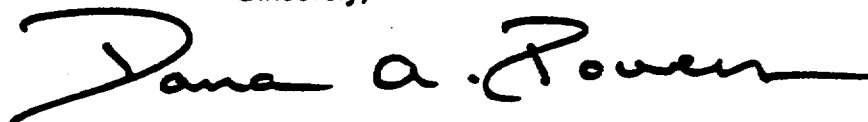
We agree with the conclusion of the staff that any of the options will maintain an acceptable level of safety. Each option purports to include provisions to update ISI and IST programs, although the criteria to require updating differ among the options. Furthermore, the analyses performed in support of the development of risk-informed inspections for Class 1, 2, and 3 piping and those done to support resolution of Generic Safety Issue (GSI)-190 show that ISI has a relatively modest impact on core damage frequency (CDF). We have not reviewed the analyses done to support risk-informed IST programs, but we believe that they would probably also show relatively modest impacts on CDF. This is not surprising. Because failures of these components were anticipated in the design of nuclear power plants, effective mitigation systems and procedures have been developed. However, because assurance of the integrity the reactor coolant pressure boundary and the containment is one of the cornerstones of the NRC regulatory system, ISI and IST programs have been required to provide additional assurance, through application of the defense-in-depth philosophy, of the integrity of these barriers and to compensate for uncertainties.

NEI and the staff argue in support of Option 1 that the current ASME Code requirements have reached such a level of maturity that further updating will provide little benefit. We believe that the review of the past decade of experience presented to us by the ASME demonstrated that there were significant changes to the ISI, IST, and operations and maintenance requirements that improved the effectiveness and efficiency of these programs and that developments in technology and operating experience could lead to additional changes in the inspection programs. Changes are not introduced in the ASME Code requirements frivolously. The ASME Code represents the consensus of a broad-based group of experts that includes strong utility representation (approximately 30% of the Section XI membership) as well as

representation from manufacturers, vendors, the NRC, and other engineering and consulting organizations.

Under Option 1, any mandated updates to the ISI and IST programs would have to pass the 10 CFR 50.109 backfit criteria. The 50.109 evaluation is not well suited to assess the appropriateness of defense-in-depth requirements, which are intended to address uncertainties that are difficult to quantify. In our May 19, 1999 report, we outlined an approach for developing a systematic methodology for the evaluation of defense in depth; however, lacking such a methodology at the present time, decisions on defense in depth will have to be based on judgment. The collective judgment of the broad-based group of experts represented by the ASME Code should be reflected in the inspection requirements.

Sincerely,



Dana A. Powers
Chairman

References:

1. Memorandum dated November 18, 1999, from William D. Travers, Executive Director for Operations, NRC, for the Commissioners, SECY-99-XXX, Subject: 120-Month Update Requirement for Inservice Inspection and Inservice Testing Programs (Predecisional Draft).
2. ACRS letter dated May 19, 1999, from Dana A. Powers, Chairman, ACRS, to Honorable Shirley A. Jackson, Chairman, NRC, Subject: The Role of Defense In Depth in a Risk-Informed Regulatory System.
3. Memorandum dated June 24, 1999, from Annette L. Vietti-Cook, Secretary, NRC, to William D. Travers, Executive Director for Operations, NRC, Subject: Staff Requirements - Reconsideration of SECY-99-017 (Proposed Amendment to 10 CFR 50.55a).
4. Letter dated April 19, 1999, from Dana A. Powers, Chairman, ACRS, to William D. Travers, Executive Director for Operations, NRC, Subject: SECY-99-017, "Proposed Amendment to 10 CFR 50.55a."
5. Table provided by ASME during ACRS meeting, December 2-4, 1999, "Important Section XI SG NDE Code Changes and Code Cases, 1989 Addenda through 1999 Addenda," Revision 2, 11/1/99.
6. Memorandum dated November 12, 1999, from Ashok C. Thadani, Director, Office of Nuclear Regulatory Research, NRC, to John T. Larkins, Executive Director, Advisory Committee on Reactor Safeguards, Subject: Generic Safety Issue-190, "Fatigue Evaluation of Metal Components for 60-Year Plant Life."



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

July 23, 1999

The Honorable Greta Joy Dicus
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Dicus:

SUBJECT: PROPOSED FINAL AMENDMENT TO 10 CFR 50.55a, "CODES AND STANDARDS"

During the 464th meeting of the Advisory Committee on Reactor Safeguards, July 14-16, 1999, we reviewed the proposed final amendment to 10 CFR 50.55a. Our Subcommittee on Materials and Metallurgy also reviewed this matter on March 25, 1999. During these reviews, we had the benefit of discussions with representatives of the NRC staff and of the documents referenced.

Conclusions and Recommendations

We recommend approval of the proposed final amendment to 10 CFR 50.55a. This amendment will: provide significant improvements in the effectiveness of inservice inspections through the expedited implementation of performance demonstration requirements for inspectors; update other requirements for inservice testing; and incorporate American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Cases for assessment and temporary repair of Class 3 piping.

Discussion

The staff issued the proposed amendment to 10 CFR 50.55a for public comment in December 1997 and has reconciled the comments it received from 65 separate sources. The proposed final amendment to 10 CFR 50.55a will:

- revise the requirements for the construction, inservice inspections, and inservice testing of nuclear power plant components;
- update 10 CFR 50.55a to endorse the 1995 Edition of the ASME Boiler and Pressure Vessel Code and the 1996 Addenda thereto, with modifications and limitations;
- incorporate by reference for the first time the ASME Code for Operation and Maintenance;

- implement performance demonstrations for ultrasonic examination systems;
- supplement motor-operated valve stroke time testing with programs for demonstrating design-basis capabilities; and
- implement check valve condition monitoring on a voluntary basis.

The proposed final amendment to 10CFR 50.55a includes a number of changes in response to public comments. We believe that the staff has adequately addressed these comments. The proposed rule also contains a number of modifications and limitations on the use of the ASME Code by licensees. We believe that the staff has provided sound arguments for the imposition of these restrictions. The number of restrictions is not excessive. These restrictions do not undermine the intent of the requirement to utilize consensus industry standards.

On April 27, 1999, the staff published a supplement to the proposed amendment to 10 CFR 50.55a requesting public comment on a proposal by the staff to eliminate the current requirement for licensees to update their inservice inspection and inservice testing programs to the latest approved edition of the ASME Code every 120 months. Subsequently, as directed by the Commission, the staff is addressing this proposal in a separate rulemaking. The staff is in the process of resolving public comments on this proposal and we expect to have further discussions on this matter after the staff has reconciled public comments.

Sincerely,



Dana A. Powers
Chairman

References

1. U. S. Nuclear Regulatory Commission, Draft Final Rule, 10 CFR Part 50, RIN 3150-AE26, "Industry Codes and Standards; Amended Requirements," received July 1, 1999.
2. Memorandum dated June 24, 1999, from Annette L. Vietti-Cook, Secretary of the Commission, to NRC Commissioner McGaffigan, Subject: COMEXM-99-001 - Reconsideration of SECY-99-017 (Proposed Amendment to 10 CFR 50.55a).
3. Memorandum dated June 24, 1999, from Annette L. Vietti-Cook, Secretary of the Commission, to William D. Travers, Executive Director for Operations, NRC, Subject: Staff Requirements - COMEXM-99-001 - Reconsideration of SECY-99-017 (Proposed Amendment to 10 CFR 50.55a).
4. Letter dated October 30, 1998, from Gus C. Lainas, Office of Nuclear Reactor Regulation, to Robert L. Seale, Chairman, ACRS, Subject: Final Amendment to 10 CFR 50.55a, "Codes and standards."



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

April 19, 1999

Dr. William D. Travers
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Dr. Travers:

SUBJECT: SECY-99-017, "PROPOSED AMENDMENT TO 10 CFR 50.55a"

During the 461ST meeting of the Advisory Committee on Reactor Safeguards, April 7-10, 1999, we reviewed SECY-99-017. Also, our Materials and Metallurgy Subcommittee met on March 24-25, 1999, to review this matter. During these reviews, we had the benefit of discussions with representatives of the NRC staff and the Nuclear Energy Institute (NEI), and of the documents referenced.

Recommendation

We recommend against eliminating the 120-month update requirement for inservice inspection (ISI) and inservice testing (IST) programs from the proposed amendment to 10 CFR 50.55a.

Discussion

In May 1995, we decided not to review the proposed amendment to 10 CFR 50.55a until after the staff reconciled public comments. Since then, the proposed amendment has undergone numerous changes. The staff has reviewed the public comments and is preparing the proposed final amendment to 10 CFR 50.55a. Based on internal staff discussions and the public comments, the staff is considering eliminating the regulatory requirement that licensees update their ISI and IST programs to the latest American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code every 120 months. Before proceeding with the final amendment to 10 CFR 50.55a, the staff plans to request public comments specifically on the proposed elimination of the 120-month update requirement.

The staff originally endorsed the ASME Code in 1971. Recognizing that the ASME Code would be updated as experience was gained with its application, the staff also required licensees to update their ISI and IST programs every 120 months.

The primary justifications for the proposed elimination of the update requirement are the maturation of the currently applicable ASME Code and the reduction of the burden on licensees caused by the updating of ISI and IST programs.

We are perplexed by the argument that experience suggests that the current ASME Code requirements have reached such a level of maturity that further updating will provide little benefit. We have recently reviewed a staff safety evaluation report (SER) on a Westinghouse topical report concerning risk-informed inspections. The topical report demonstrated that current ASME Code inspections were not an effective use of resources, and that significant improvements in inspection efficiency could be achieved through the use of risk insights and operational experience. In addition, pilot efforts on risk-informed IST seem to promise similar benefits.

During the past decade, experience has shown that performance demonstrations are superior to prescriptive requirements for qualifying inspectors and inspection techniques. The experience of the past decade has also demonstrated that new modes of degradation can occur and may require changes in inspection procedures. Erosion/corrosion, boiling water reactor (BWR) vessel internals cracking, and circumferential stress corrosion cracking of steam generator tubes were not recognized as important degradation modes a decade ago and inspection procedures had to be updated to deal with such degradation modes. Inspection technologies have also matured. Indeed, in technologies that are heavily dependent on electronics and computer analysis of signals, a decade may represent four or five generations of technology.

This experience suggests that inspection technology is not so static and mature that 120-month updates are unnecessary. Rather, changes in technology and inspection requirements frequently require prompter action than can easily be accommodated by modifications of the ASME Code. The review of operational experience and technology changes through the ASME Code consensus process is important and worthwhile. The 120-month update provides a good baseline for inspection requirements.

In SECY-99-017, the staff recommends the elimination of the 120-month update requirement. Anecdotal information in SECY-99-017 suggests that a typical update may cost a licensee \$200,000 to \$300,000 every 10 years. An NEI representative cited an anecdotal number of \$1 million. Even if this higher estimate is more realistic, the resultant burden does not seem excessive since the actual costs of inspections are far higher than the update costs. Updating would be expected to provide more cost-effective inspections and lower exposures.

In SECY-99-017 the staff states that if the 120-month update requirement is eliminated, licensees who voluntarily choose to update to a later ASME Code edition or addenda

will be required to implement all provisions of that edition or addenda. We concur with this staff position on implementing all the provisions of an edition or addenda.

Sincerely,



Dana A. Powers
Chairman

References:

1. SECY-99-017, memorandum dated January 13, 1999, from William D. Travers, Executive Director for Operations, NRC, for the Commissioners, Subject: Proposed Amendment to 10 CFR 50.55a.
2. U. S. Nuclear Regulatory Commission, Safety Evaluation Report Related to "Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection" (Topical Report WCAP-14572, Revision 1), October 1998 (Predecisional).
3. Westinghouse Energy Systems, WCAP-14572, Revision 1, "Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection Topical Report," October 1997.
4. Westinghouse Energy Systems, WCAP-14572, Revision 1, Supplement 1, "Westinghouse Structural Reliability and Risk Assessment (SRRA) Model for Piping Risk-Informed Inservice Inspections," October 1997.
5. Letter dated August 14, 1998, from John N. Hannon, Office of Nuclear Reactor Regulation, NRC, to C. Lance Terry, TU Electric, Subject: Approval of Risk-Informed Inservice Testing (RI-IST) Program for Comanche Peak Steam Electric Station, Units 1 and 2.

Background Material
For
March 24, 2000
ASME Presentation to
USNRC Commissioners

Enclosed are the following:

- **Summary of Important BPVC Section XI Code Changes and Code Cases: 1989 Addenda through 1999 Addenda**
 - **Nondestructive Examination-pgs. 1-6**
 - **Water Cooled Systems-pgs. 7-9**
 - **Repair/Replacement-pgs. 10-14**
 - **Liquid Metal Cooled Systems-pgs. 15-16**

- **OM Code Revisions- 1990 to Present pg. 17**

- **ASME President Nickell Letter 6/16/99 to USNRC Commissioners-pg.18**

- **ASME Response to Federal Register Notice Vol. 64 No. 80 April 27, 1999-pgs. 19-25**

**Important Section XI SG NDE Code Changes and Code Cases
1989 Addenda through 1999 Addenda**

(Note 1)

Revision 2, 11/1/99

<u>Description of Code Change or Code Case:</u>	<u>Purpose/Benefit:</u>	<u>Classification:</u> (See Note 2)
1. Requirements for demonstrating ultrasonic(UT) examination performance were added to the Code in the 1989 Addenda as Appendix VIII, "Performance Demonstration for ultrasonic Examination Systems". Incorporated Code Case N-409-2.	Section XI determined that Code prescribed UT methodology may not perform predictably in the presence of some service induced damage mechanisms. Appendix VIII established a "show me" approach to applied UT by providing criteria for qualifying the procedure, equipment, and personnel called collectively the "UT System". The benefits realized with Appendix VIII include safety improvements with improved flaw detection and sizing for reactor pressure vessel under clad regions, for piping systems and it provided improved confidence in NDE contributions to failure probability calculations. Minimizes personnel exposure by using appropriate detection and flaw sizing approaches the first time. Saves costs by better utilizing NDE resources.	IS, IIS, and RRE
2. Provided a consensus approach for surface preparation of new pipe welds to make them more accessible for NDE.	These requirements provide direction for weld reinforcement surface contours for new welds to optimize UT search unit contact. Change recognizes that all welds are surface prepared and if performed properly can significantly improve access for UT examination. The requirements were later adopted in Section III for pre-service inspection.	IIS and RRE
3. Replaces the surface examination requirement for reactor closure head nuts (Item B6.10) with a VT-1 visual examination.	Alternative requirements to eliminate a costly examination that had absolutely no value added benefit. Approximately 18 years of surface inspection did not report any relevant findings. A 90% cost reduction.	IIS
4. Limited UT scan for flaws oriented transverse to welds in carbon and low alloy steel piping, excluded were welds with transverse flaws reported during the pre-service examination.	Change accepts UT of long. seam at intersection of circ. seam as only need & that transverse flaw initiation was not plausible during service in carbon and low alloy steel piping. Experience justified the change. Cost savings.	IIS and RRE
5. Made mandatory, practical examinations for qualification and certification of Level III NDE Personnel. Incorporated Code Case N-489.	The change ensures that Level III individuals have and maintain appropriate skills to practice NDE examinations.	IIS
6. Provided more specific requirements regarding which bolts should be examined when evidence of leakage is identified.	Optimized corrective action when leakage at bolted connections is identified, minimized aging affects from handling, removal and reinstallation of bolting.	IIS
7. Revision replaced system functional test and system in-service test with the system leakage test for Class 1,2,and 3 systems and components.	Clarifies and simplifies pressure levels at various locations throughout the system during the pressure test. Cost savings.	IIS and RRE
8. Changed NDE Examiner vision acuity/examination test requirements from Jaeger to Snellen and provides near-distance qualification requirements. Incorporated Code Case 490-1.	Established requirements equivalent and common to eye care service providers.	IIS
9. Combined the hydrostatic testing of the Class 2 portion of BWR Main Steam System with the hydro test of the Class 1 portion when it cannot be isolated. Incorporates Code Case N-479.	Resolves a Code implementation problem. Cost savings.	IIS

Description of Code Change or Code Case:	Benefit:	Classification: (See Note 2)
10. Exempts open ended vent and drain lines and open ended safety and relief valve discharge lines from a flow path test.	Eliminates requirement to perform an impractical flow test that had no value added benefit. Cost savings	IIS
11. Adds requirements for application of Appendix VIII flaw sizing to vessels less than 2 inches thickness and on components other than those identified in Appendix VIII scope.	Recognizes need for use of procedures/techniques specific to sizing of flaws, allows use of procedures already qualified and minimizes need for additional qualifications.	IS, and IIS
12. Clarifies that calibration materials need not be the same grade as the material to be examined with appropriate demonstration(s).	Makes it more practical to obtain material for vintage components. Cost savings.	IIS
13. Clarifies Appendix VIII and permits a 10% tolerance on the thickness of flawed test specimens used during qualifications.	Reduces numbers of specimens required in the test sets. Cost savings.	IIS
14. Adopts increased provisions for qualification of ultrasonic examination personnel, changes include specific requirements for UT training and adds requirements for qualification of the NDE Instructor. (Appendix VII)	The change provides supplemental qualification requirements unique to personnel that perform UT examinations in Nuclear power Plants. The changes respond to an identified need to improve UT examiner skills.	IS and IIS
15. Incorporated the provisions of the new ASTM E 1324-1990 "Guide for Measuring Some Electronic Characteristics of Ultrasonic Instruments"	Adapts a consensus standard for characterizing electronic instruments, modifies tolerances on the basis of recent data, and allows complete system characterization as opposed to individual components.	IIS
16. Clarified definition of limited certification and permits reduction of corresponding training hours, examination content and experience. Incorporates Code Case N-503.	Change recognized and resolved excessive qualification requirements for individuals used to perform limited tasks during the implementation of NDE procedures. Change results in significant improvements in NDE resource utilization during outages. Cost savings.	IIS and RRE
17. Incorporated Intent Inquiry XI-1-89-66 regarding lowest test pressure during a system pressure test.	Change clarifies that the 106 percent over-pressurization limit takes priority over achieving minimum pressure throughout the system. Cost savings.	IS and IIS
18. Additional requirements for performing a containment pressure test following repair or replacement.	New requirements address leakage tests, pressure test schedules, test procedures, examinations, and corrective measures.	IIS
19. Provide guidance for performing UT thickness measurements required by Section XI.	Section XI did not provide requirements for measuring thickness using UT equipment.	IIS
20. Provided new requirements for color resolution for remote visual examination.	Accounts for needs for color resolution for detection of certain material damage mechanisms such as corrosion.	IIS
21. Change incorporated Code Case N-498, Alternative Rules for 10-Year Hydrostatic Pressure Testing for Class 1 & 2 Systems. The action provides for system leakage test in lieu of a hydrostatic test.	A significant cost savings and man-rem exposure reduction because it allowed the ten-year pressure tests to be conducted at nominal operating pressure. Change recognized extreme difficulty of hydrostatic testing with no value added benefit over a system leakage test.	RRE and IIS
22. Incorporated Intent Inquiry XI-1-92-04, clarifying that pneumatic test may be performed in lieu of a system leakage test or a system hydrostatic test for Class 2 or 3 steam systems, after a repair, replacement or alteration.	Code improvement resolved an impractical requirement.	IIS
23. Incorporated Intent Inquiry XI-1-92-51, clarification for gaseous systems, requirement to remove a bolt and perform a VT-3 examination does not apply.	Resolved impractical Code requirement. Cost savings.	IIS & M
24. Appendix VIII UT Performance demonstration, scheduled or	New Supplements 10 and 11 were completed after Appendix was initially	IIS

Description of Code Change or Code Case:	Benefit:	Classification: (See Note 2)
planned scope increase to add dissimilar metal welds, weld overlays and Supplement 12 reduced requirements for an individual that qualifies for more than one technique. Flaw depth sizing was changed to use a root mean square basis instead of linear regression, a more fair and meaningful assessment.	published, they were agenda items from the beginning. Supplement 12 and introducing root mean square for sizing qualification criteria optimized and tuned the performance demonstration process to account for implementation issues including cost reduction.	
25. Appendix I, reinstates requirements previously specified in 1986 Edition to enable use of flat calibration blocks.	Significant cost savings for calibration block fabrication, resolves material availability issues.	M
26. Incorporates Code Case N-457 to permit the qualification notch of a stud to be one diameter from the end of the stud.	Resolved an implementation issue and established uniformity regarding qualification of UT techniques for studs.	IIS
27. Adds Supplement 13 to Appendix VIII to provide coordinated implementation of Supplements 4,5,6,& 7.	Optimized Appendix VIII multiple qualifications, further tuned process for cost effectiveness.	IIS
28. Incorporated Code Case N-485-1 which permits use of eddy current methodology for surface examinations.	A significant cost savings alternative to eliminate the need to remove paint or other surface protective coatings for Code required surface examinations.	IIS & RRE
29. Incorporated Code case N-458 to allow use of the yoke method for magnetic particle examination of coated surfaces on ferritic materials, without removing the surface protective coating.	Provided the technical justification and a significant cost savings for implementing surface examination requirements where protective coatings exist. Eliminated need for removing the protective coating.	IIS & RRE
30. Incorporated intent inquiry XI-1-92-70, to clarify that personnel qualified to any edition/addenda are qualified to all earlier editions/addendum.	This an other clarifications reduced administrative burden of the re-certification process and frees up resources. Cost savings.	IIS
31. Eliminates IWA-5213 holding time requirements for system leakage tests.	Optimized leak testing requirements and reduced ISI impact on critical path. Cost savings.	IIS
32. Incorporates interpretation XI-1-92-52 for leak testing of buried components.	Change simplifies and clarifies the requirements for pressure testing buried components with or without isolation valves.	IIS
33. Incorporated Code Case N-461 in Appendix III to set a piping calibration block thickness tolerance of plus or minus 25%.	Significant cost savings that reduced the number of blocks required because several pipe schedule thickness' overlapped or are close so as to not impact the UT examination.	IIS
34. Several changes to Appendix VIII to coordinate qualifications, minimize test specimens, and reduce overall number of qualifications that a UT examiner must perform.	Implementation of Appendix VIII showed a need to determine when 'enough was enough' for the number of qualifications that an individual had to perform. Benefits were cost savings and reduced burdens on the individual.	IIS & RR
35. Appendix VIII, Incorporated Code Case N-542 to eliminate the length sizing demonstration requirements for nozzle corner radius examinations.	Made UT qualification consistent with Article 3000 flaw acceptance standards which are based on flaw depth only, no length criteria is specified. Cost savings.	IIS
36. IWA-2315, and Appendix IV, adds requirements or performance demonstration of eddy current examination systems and personnel. Incorporated code cases N-307-1 & N-553.	Incorporates provisions for cost effective use of eddy current techniques including provision for demonstrating that the techniques are effective. Cost savings.	IIS and RRE
37. Incorporates Code Case N-538 updating Appendix VIII Supplements 2, 10, 11, & 12.	Expands use of RMS flaw sizing acceptance criteria improves description of capabilities and reduces failures due to occasional errors. Cost savings.	IIS
38. IWA-2314, incorporated Code Case N-574 which extended Levels I & II re-certification cycle from 3 to 5 years.	Reduced administrative burden of the re-certification process and frees up resources. Cost savings.	IIS

<u>Description of Code Change or Code Case:</u>	<u>Benefit:</u>	<u>Classification:</u> (See Note 2)
39. Revisions to IWA-2310 & 2314 to incorporate ASNT's ACP Standard CP-189 (central certification).	ACCP Standard is consistent with the central certification requirements of ISO-9712. This change promotes globalization of NDE certifications and central certification would eliminate the need to recertify at individual companies/sites. Cost savings.	IIS
40. IWA 2240, incorporates Case N-587, alternative NDE requirements for repair /replacement activities.	Allows use of 90's vintage NDE methodology vs outdated construction Code requirements provides the advantage of using the NDE method/technique to accept repairs that was used to identify the flaw.	IS & IIS
41. Incorporated Case N-534, to permit leakage testing at normal operating pressure for Class 2 & 3 pneumatic tests, in lieu of hydrostatic pressures of 1.1 or 1.25 times design.	Significant cost savings that simplified leakage testing procedures.	IIS
42. IWA-2300 to incorporate Case N-546 to allow alternate qualification methods for VT-2 examination personnel.	Provides requirements in which credit is taken for plant walkdown experience. The alternative qualification also eliminates the need to re-qualify/re-certify every 5 years. Cost savings.	IIS
43. Revisions to IWA-2300 to allow alternative qualifications for VT-3 examination personnel.	Provides reduced requirements in which credit is taken for installation and maintenance experience. Re-qualification/re-certification was extended to 5 years. Cost savings.	IIS
44. New Appendix VI, Qualification of Personnel for Visual Examination.	Visual qualification requirements are not typically outlined in the Qualification and Certification standards referenced in the Code (i.e. SNT-TC-1A and CP-189). New Appendix VI provides training and examination requirements for employers to include in their written practice.	IIS
45. Appendix-IV, incorporated Cases N-401-1 & N-402-1 to update Code on latest applied eddy current examination technology.	Code update incorporating latest multi-frequency techniques for eddy current examination.	IIS
46. Code Case N-618 permits elimination of nozzle inner radius examinations for pressurizer and steam generator nozzles.	Discontinues examinations after 30 years of operating experience shows no potential for initiation of degradation in those locations. Cost savings.	RR
47. Code case N-613 reduces reactor vessel nozzle-to-vessel weld inservice examination volumes.	Eliminates examination volumes not subject to service induced degradation. Cost savings.	IIS & RRE
48. Code Case N-592 enables use of ASNT Central Certification (ACCP) as alternative to IWA-2300.	Endorses central certification, an option to simplify site to site qualifications. Reduces administrative burden. Cost savings.	IIS
49. Code Case N-587 NDE alternatives for repair/replacement activities.	Allows for use of updated NDE methodology vs antiquated Construction Code NDE.	IS & IIS
50. Code Case N-583 reduces annual training for UT examiners from 10 to 8 hours.	Makes timing more consistent with shift schedules timing.	IIS
51. Code Case N-574, extends re-certification time to from 3 to 5 years.	Reduces administrative burden and frees up resources. Cost savings.	IIS
52. Code Case N-553 permits use of eddy current examination as an alternative to surface examinations required for pipe welds.	Cost savings and reduction in radiation exposure.	IIS & RRE
53. Code Case N-552 allows use of computer modeling to reduce numbers of required mockups and performance demonstrations for nozzle examinations.	Saves millions of dollars in costs of mockups for demonstrating UT techniques on dozens of different nozzle configurations. Provides validation of all applied UT techniques.	IIS
54. Code Case N-546 alternative qualification for VT-2 personnel.	Permits qualification of plant personnel that are well qualified by experience and job function to perform those examinations. Cost savings.	IIS

<u>Description of Code Change or Code Case:</u>	<u>Benefit:</u>	<u>Classification:</u> (See Note 2)
55. Code Cases N-545, N-542, N-541, N-538, N-537, associated with Appendix VIII implementation.	Changes made Appendix VIII implementation possible.	IIS
56. Code Case N-543 provides alternative intervals for periodic verification of digitally generated time-baselines in mechanized equipment.	Cost effective changes accounting for digital equipment stability. Cost savings.	IIS
57. Code Case N-534 permits use of normal operating pressure for Class 2 & 3 pneumatic tests, in lieu of hydrostatic pressures.	Simplifies leak testing, significant reduction on outage impact. Cost savings.	IIS
58. Code Case N-533 provides alternatives to removal of insulation from Class 1 pressure retaining bolted connections while the system is at operating pressure and temperature.	Permits hot examination to be performed without removal of insulation. Examinations are performed with insulation removed after depressurizing the system. Cost savings.	IIS & RRE
59. Code Case N-524 limits extent of inservice examinations of longitudinal weld seams in piping.	Significant cost savings based on experience and no potential damage mechanisms for the piping addressed.	RRE
60. Code Case N-503 allows reduced qualification requirements for personnel used in limited scope activities related to NDE performance.	Reduces administrative burdens and minimizes costs to use personnel in limited NDE assignments. Reduces radiation exposure to fully certified NDE personnel.	IIS & RRE
61. Code Case N-498 including 4 revisions to update and optimize pressure testing.	Allows system leakage testing in lieu of hydrostatic testing, significant cost savings with reduction of ISI outage impact and simplification of procedures.	IS & IIS
62. Code Case N-495 allows the functional provisions of IWV as an alternative to system hydrostatic testing for relief valves reinstalled in the system.	Significant cost savings with reduction in resources and impact on outage schedule.	IIS
63. Code case N-481 alternative visual examinations in lieu of volumetric examination of cast austenitic pump casings.	Provided alternative to non-meaningful examination based on no credible inspection method and no experience or potential for failure. Cost savings.	IIS & RRE
64. Code case N-479-1 allows for pressure testing main steam valves to Class 1 requirements when it cannot be isolated.	Code optimization. Cost savings.	IIS
65. Code Case N-471 enables use of acoustic emission to monitor flaw growth in lieu of IWB 2420 Successive Examinations.	Significant cost savings that eliminates need for removal of reactor fuel and internals for 3 consecutive periods (3 years) to monitor a flaw evaluated as acceptable for continued service.	IIS & RRE
66. Code Case N-416 allows alternatives to hydrostatic testing including deferrals and NDE in lieu of pressure testing.	Significant cost savings and reduction in operational exercises during outages.	IIS
67. Code Case N-335 updated Appendix III to include UT methodology for austenitic pipe welds.	Codified requirements for UT of austenitic piping in response to service induced stress corrosion cracking. Improved quality of pipe weld examinations.	IS, IIS & RRE
68. Code Case N-522 allows the use of Appendix J testing of Class 2 penetration piping rather than Section XI System Leakage Tests.	Allows plants to take credit for their Appendix J testing, which is required to be performed on all piping that is Class 2 for the purposes of containment penetration, in lieu of performing Section XI leakage tests. Eliminates a significant number of redundant pressure tests. Significant cost savings.	IIS
71. Code Case 307 alternative examination volume for Class 1 bolting. Also permits the option of a surface or volumetric examination when the studs are removed.	Can reduce time spent on an examination by factor of 10 or more. Significant cost savings.	IIS
72. Code Case N-622 Appendix VIII rewrite.	Updates Appendix VIII to resolve remaining Code implementation issues and resolve issues with a proposed NRC Regulation.	IS & IIS

<u>Description of Code Change or Code Case:</u>	<u>Benefit:</u>	<u>Classification:</u> (See Note 2)
73. Code Case N-566-1 Provides evaluation process as a corrective measure in lieu of bolting removal.	Improved technique/methodology, reduces radiation exposure, Significant cost savings.	IIS & RRE

Notes:

1) Items listed in this table are the more important Section XI SG NDE changes and Code Cases approved in the ten years from the 1989 Edition through the 1999 Addenda. Overall, during this time frame, individual actions which resulted in a published Code change, for which the Subgroup on NDE was responsible, numbered 89 (which includes the important actions separately listed in the table). In addition, Code Cases and Case revisions, for which the Subgroup on NDE was responsible, numbered 94 (which includes the important Cases separately listed in the table). These Code changes and Code Cases are broken down by primary classification as follows (using the classification in Note 2 below):

Code Changes:

Improved Safety (IS): 5
Improved Industry Standards (IIS): 40
Reduced Radiation Exposure (RRE): 1
Reduced Requirements (RR): 0
Maintenance of the Code (M): 43
Total Code Changes: 89

Code Cases/Case Revisions:

Improved Safety (IS): 3
Improved Industry Standards (IIS): 59
Reduced Radiation Exposure (RRE): 1
Reduced Requirements (RR): 1
Maintenance of the Code (M): 30
Total Code Cases and Case revisions: 94

In addition, due to the importance of reducing radiation exposure to personnel, 8 out of the 89 total Code changes and 8 out of the 94 Code Cases/Case Revisions resulted in a reduction of radiation exposure, even though the primary classification was not noted as Reduced Radiation Exposure in the overall totals noted above.

2) Code changes and Code Cases are classified using the following classification system and abbreviations:

- **IS** - Improved Safety. Those action items that have an obvious affect on plant safety, such as improving the assurance of pressure boundary integrity or reducing core damage frequency as determined from a risk approach.
- **IIS** - Improved Industry Standard. Improvements including, for example, new or better methods and processes, clarified or improved understanding of requirements due to Code changes, and changes to address industry experience. "Improved industry standard" does not just represent improved performance, although that is also included. Although the classifications of "reduced radiation exposure", "reduced requirements" and "improved safety" may seem to be sub-categories of "improved industry standard", "reduced radiation exposure", "reduced requirements" and "improved safety" have been separately classified to better define a change or Case. Although some "improved industry standards" do result in increased requirements, where this is the case, the ASME consensus process has determined that the improvements in the industry standard more than justify the increased requirements.
- **RRE** - Reduced Radiation Exposure. Those action items that result in a reduction in radiation exposure from performing the requirements of the 1989 Edition of Section XI.
- **RR** - Reduced Requirements. Those action items that primarily result in an elimination of unnecessary requirements in the 1989 Edition or result in a reduction in costs or human resources. Reduced requirements are not a reduction in the level of safety, but rather are a redefinition of what the appropriate level of safety should be.
- **M** - Maintenance of the Code. General changes associated with maintaining the Code, minor changes, editorial changes and errata.

More than one classification may be used to better define a change or Case. However, the first classification listed in each row is considered the primary classification.

Important Section XI SGWCS Code Changes and Code Cases
1989 Addenda through 1999 Addenda
 (Note 1)

Description of Code Change or Code Case:	Purpose/Benefit:	Classification: (See Note 2)
1. A revision to the exemption criteria for Class 2 and 3 piping systems. This revision incorporated Code Case N-408-2 in the 1989 Addenda.	Expanded the exemptions for Class 2 and 3 piping systems to make all vessels exempt from examination when in exempt piping. It also identified that vessels with multiple openings exemptions are based on cumulative cross-section area of openings.	RR
2. A revision to incorporate a sampling plan for inspection of component supports. This revision incorporated the provisions of Code Case N-491 in the 1990 Addenda.	This significantly decreases the number of piping supports to be examined, but increases the number of other component supports to be examined.	RR
3. A revision to Table IWE 2500-1, Category E-C to add inspection requirements in the 1991 Addenda.	The revision adds requirements for ultrasonic thickness measurements of containment liner surface areas subject to accelerated degradation.	IIS
4. A revision to IWL concerning corrosion and tension testing of wire strands in the 1991 Addenda.	The revision requires tendon wire and strands to be examined to determine the most severe location of corrosion. If corrosion has occurred, tension tests are to be performed on a sample of wires and strands with the most corrosion.	IS
5. A revision to concrete examination requirements in the 1993 Addenda.	The revision makes IWL more consistent with Regulatory Guide 1.35. It adds examination and acceptance standards for concrete surfaces and tendon anchorage areas. It also adds acceptance criteria for tendon elongation.	IIS
6. A revision to exempt welds or portions of welds in penetrations from examination. This revision incorporated the provisions of Code Cases N-198-1, N-332, and N-334 in the 1994 Addenda.	The revision eliminated examination that could not be performed. By making the code change, Owner's would no longer have to seek NRC approval of relief from the Code for these welds.	RR
7. A revision to examination criteria for integrally welded attachments. This revision incorporated the provisions of Code Case N-509 in the 1995 Addenda.	The change modifies when examinations are to be performed and the method used. Attachments now only require examination when there is evidence of support damage. Class 1 now requires surface examinations instead of volumetric and Class3 examinations were changed from VT-3 to VT-1.	RR
8. This revision incorporated the provisions of Code Case N-521 in the 1995 Addenda.	The change permits deferral of PWR nozzle welds to the end of the interval. It does not apply to the first interval.	IIS
9. This revision incorporated the provisions of Code Case N-547 in the 1995 Addenda.	This revision eliminates the requirement for VT-1 examination of CRD housing bolts.	RR
10. This revision incorporated the provisions of Code Case N-524 in the 1995 Addenda.	This revision eliminates the examination on longitudinal welds in piping except for the portion covered by the circumferential weld volumetric examination.	RR
11. This revision incorporated the provisions of Code Case N-435-1 in the 1995 Addenda.	This revision allows surface examination in lieu of volumetric examination for vessel 1/5" thick or less.	RR
12. This revision incorporated the provisions of Code Case N-323-1 in the 1997 Addenda.	This revision allows a one-sided surface examination in lieu of a two-sided examination or volumetric examination when only one side is accessible.	RR
13. Code Case N-618, "Alternative Requirements for Nozzle Inner Radius Inspections for Class 1 Pressurizer and Steam Generator	The case allows the nozzle inner radius examinations to be discontinued	RR

<u>Description of Code Change or Code Case:</u>	<u>Benefit:</u>	<u>Classification:</u> (See Note 2)
Nozzles"		
14. Code Case N-609, "Alternative Requirements to Stress-Based Selection Criteria for Category B-J Welds"	The case allows the use of location and material type as well as stress to be used for selection of welds to be examined as an alternative to the stress-based criteria.	RR
15. Code Case N-560, "Alternative Examination Requirements for Class 1, Category B-J Piping Welds"	The case allows the use of a probabilistic assessment to select welds to be examined. It is significant because it reduces the sample size from 25% to 10% of the B-J welds.	RR
16. Code Case N-577, "Risk Informed Requirements for Class 1, 2, and 3 Piping, Method A"	The case allows the use of risk analysis to determine which welds to inspect and how often they should be inspected.	RR
17. Code Case N-578, "Risk Informed Requirements for Class 1, 2, and 3 Piping, Method B"	The case allows the use of a panel of experts to use risk parameters to determine which welds to inspect and how often they should be inspected.	RR
18. Code Case N-575, "Alternative Examination Requirements for Full Penetration Nozzle-to-Penetration Welds in Reactor Vessels with Set-on Type Nozzles"	The case provides an alternate (smaller) volume to be examined for set-on nozzles.	RR
19. Code Case N-486, "Inservice Inspection, Repair, and Replacement Requirements for Class MC and Metallic Liners of Class CC Components"	This was an implementing case to provide IWE criteria while the Code revision containing the criteria was being reviewed by NRC for endorsement.	IIS
20. Code Case N-478, "Inservice Inspection for Class CC Concrete Components of Light-Water Cooled Power Plants"	This was an implementing case to provide IWL criteria while the Code revision containing the criteria was being reviewed by NRC for endorsement.	IIS

Notes:

1) Items listed in this table are the more important Section XI Subgroup Water Cooled Systems changes and Code Cases approved in the ten years from the 1989 Edition through the 1999 Addenda. Overall, during this time frame, individual actions which resulted in a published Code change, for which the Subgroup on Water Cooled Systems was responsible, numbered 77 (which includes the important actions separately listed in the table). In addition, Code Cases and Case revisions, for which the Subgroup on Water Cooled Systems was responsible, numbered 41 (which includes the important Cases separately listed in the table). These Code changes and Code Cases are broken down by primary classification as follows (using the classification in Note 2 below):

Code Changes:

Improved Safety (IS): 1
Improved Industry Standards (IIS): 40
Reduced Radiation Exposure (RRE): 0
Reduced Requirements (RR): 14
Maintenance of the Code (M): 22
Total Code Changes: 77

Code Cases/Case Revisions:

Improved Safety (IS): 0
Improved Industry Standards (IIS): 22
Reduced Radiation Exposure (RRE): 0
Reduced Requirements (RR): 17
Maintenance of the Code (M): 2
Total Code Cases and Case revisions: 41

In addition, due to the importance of reducing radiation exposure to personnel, 13 out of the 77 total Code changes and 9 out of the 41 Code Cases/Case Revisions resulted in a reduction of radiation exposure, even though the primary classification was not noted as Reduced Radiation Exposure in the overall totals noted above.

2) Code changes and Code Cases are classified using the following classification system and abbreviations:

- **IS** - Improved Safety. Those action items that have an obvious affect on plant safety, such as improving the assurance of pressure boundary integrity or reducing core damage frequency as determined from a risk approach.
- **IIS** - Improved Industry Standard. Improvements including, for example, new or better methods and processes, clarified or improved understanding of requirements due to Code changes, and changes to address industry experience. "Improved industry standard" does not just represent improved performance, although that is also included. Although the classifications of "reduced radiation exposure", "reduced requirements" and "improved safety" may seem to be sub-categories of "improved industry standard", "reduced radiation exposure", "reduced requirements" and "improved safety" have been separately classified to better define a change or Case. Although some "improved industry standards" do result in increased requirements, where this is the case, the ASME consensus process has determined that the improvements in the industry standard more than justify the increased requirements.
- **RRE** - Reduced Radiation Exposure. Those action items that result in a reduction in radiation exposure from performing the requirements of the 1989 Edition of Section XI.
- **RR** - Reduced Requirements. Those action items that primarily result in an elimination of unnecessary requirements in the 1989 Edition or result in a reduction in costs or human resources. Reduced requirements are not a reduction in the level of safety, but rather are a redefinition of what the appropriate level of safety should be.
- **M** - Maintenance of the Code. General changes associated with maintaining the Code, minor changes, editorial changes and errata.

More than one classification may be used to better define a change or Case. However, the first classification listed in each row is considered the primary classification.

**Important Section XI "Repair/Replacement Activity" Code Changes and Code Cases
1989 Addenda through 1999 Addenda
(Note 1)**

<u>Description of Code Change or Code Case:</u>	<u>Purpose/Benefit:</u>	<u>Classification:</u> (See Note 2)
1. Requirements for repair of heat exchanger tubing by sleeving were added in the 1989 Addenda.	Adds an industry consensus standard on heat exchanger tube sleeving to repair degraded tubes.	IIS
2. The half bead SMAW welding requirements were replaced with temper bead SMAW welding requirements in the 1990 Addenda.	Incorporate improved welding requirements when the required postweld heat treatment can not be performed. The added temper bead welding requirements resulted in removal of less of the initial butter pass, and less in-process examination, therefore reducing repair time and radiation exposure	IIS and RRE
3. IWL-4000 for repair of concrete containments and IWL-7000 for replacement of post-tensioning systems in concrete containments were added in the 1991 Addenda.	Adds industry consensus standards on repair and replacement activities on concrete containments.	IIS
4. The 1991 Addenda combined IWA-4000 (Repairs) and IWA-7000 (Replacements) and the 1995 Addenda eliminated the distinction between Repairs and Replacements and restructured the Repair/Replacement Activities.	These changes substantially improved the usability of Section XI for Repair/Replacement Activities.	IIS
5. Requirements for repair welding using the automatic or machine gas tungsten-arc welding (GTAW) temper bead technique were added in the 1991 Addenda. This change incorporates Code Case N-432.	This change provides an industry consensus standard for use of automatic or machine gas tungsten arc welding (GTAW) as an alternative to shielded metal arc welding (SMAW) for performing temper bead welding. It is usually the preferred technique for performing temper bead repairs.	IIS
6. The exemption for replacements NPS 1 and less was replaced with an alternative set of requirements in the 1992 Addenda. Class 1 items larger than the plant makeup capability, heat exchanger tubing, and sleeves and welded plugs used for heat exchanger tubing must meet all Code requirements. The 1991 Addenda added heat exchanger tubing, sleeves and plugs as not exempt.	Section XI determined it was not appropriate to exempt replacement of items, the failure of which would be defined as a LOCA. Industry use of the exemption and Section XI interpretations may not have been assuring these small items would function as designed. Use of the alternative, or use of full Code requirements, was intended to assure these small items will function as designed after replacement.	IS
7. Requirements for rerating components and systems were added in the 1995 Addenda.	Adds industry consensus standards for rerating of items, in the absence of a consistent industry approach.	IIS
8. For repair/replacement activities involving design or configuration changes, IWA-4000 was revised in the 1995 Addenda and the 1996 Addenda to clarify that the Owner is required to revise or update Owner's Requirements, Design Specifications and Design Reports. The revisions or updates are required to be traceable to and from the original record or report to provide a record of the current status of the item.	Some Owners and Repair Organizations were not maintaining the design of items to the Construction Code requirements, nor maintaining these noted documents to provide a current status of the design of an item, as intended by Section XI. These changes clarify the requirements to assure consistent implementation by the industry.	IIS
9. Expanded provisions on reconciliation were added in the 1995 Addenda and the 1996 Addenda. Case N-554, "Alternative Requirements for Reconciliation of Replacement Items, Section	Section XI has required, since the addition of Replacement rules, a reconciliation of use of Later Editions or Addenda of the Construction Code when components, parts, and materials are replaced. This change provides	IIS and RR

<u>Description of Code Change or Code Case:</u>	<u>Benefit:</u>	<u>Classification:</u> (See Note 2)
XI, Division 1" contains similar provisions.	an industry consensus standard with details as to how this reconciliation is to be performed and for some items, such as components, results in a reduction what much of the industry had perceived as required.	
10. The alternative requirements for small items was revised in the 1995 Addenda to include repair of small items. Case N-544, "Repair/Replacement of Small Items, Section XI, Division 1" contains similar provisions.	Prior to the 1995 Addenda, Section XI provided an exemption, or alternative less restrictive requirements, for NPS 1 and smaller replacement items and installation thereof. Repairs were not similarly exempted. Therefore, a repair to an item was subject to more restrictive requirements than replacing the item. This change allows application of the alternative requirements for replacement to weld repairs of small items, thereby reducing requirements and costs.	RR
11. IWA-4451 was added in the 1995 Addenda. This change addressed requirements for obtaining and installing Helical Coil Threaded Inserts. This action incorporated Code Case N-496	This change allows Owner's to perform repairs to defective threaded connections without replacing the item or performing extensive remachining. The rules provide for an equivalent level of safety, while at the same time allowing for more economical repairs. In addition, based on the fact that the repairs can be completed in a more expeditious manner, dose will be lower.	IIS and RRE
12. Qualification and performance requirements to permit underwater welding for repair and replacement activities on P-No. 8 and P-No. 4X materials were added in the 1996 Addenda. Provisions for underwater welding of P-No. 1 materials were added in the 1997 Addenda. These changes incorporate Code Case N-516 and Case N-516-1.	Adds industry consensus standards for performing underwater welding. These provisions are useful for underwater work in spent fuel pools and service water systems.	IIS and RRE
13. Alternative provisions for replacement of snubbers and pressure relief valves were added in the 1996 Addenda. This change incorporates Case N-508-1.	This change provides alternative rules to those stated in IWA-4000 when snubbers and pressure relief valves are removed only for testing and are then rotated with snubbers and relief valves currently installed within the Section XI boundary. The alternative provisions reduce the documentation requirements and costs for these numerous and routine replacements.	RR
14. IWA-4000 provisions were revised in the 1997 Addenda to include the addition of new systems to an existing nuclear plant.	Prior to this change, Owners were required to address addition of new systems with the NRC, usually using newer Codes. This change allows use of Section XI to install a new system using the Construction Code already used in the plant for similar systems, saving considerable cost and utilizing existing warehouse stock.	IIS and RR
15. Alternative requirements allowing Owners to transfer welding procedure qualifications was incorporated in the 1997 Addenda. This incorporates Case N-573.	The change allows Owners to use welding procedure qualifications performed and documented by other Owners, resulting in cost savings.	RR
16. An alternative to use mechanical clamping devices for temporary repairs of Class 2 and 3 piping was included in the 1997 Addenda. This change incorporates Case N-523-1.	This change provides an alternative industry consensus standard for temporary clamping devices to provide structural integrity of degraded piping without performing standard repair or replacement. The use of the clamping device can preclude the need for forced plant shutdowns.	IIS, RRE and RR
17. Provisions for a system leakage test as an alternative to the previously required hydrostatic pressure tests following repair/replacement activities were added in the 1999	This change allows a system leakage test at operating pressure to be used in lieu of a hydrostatic test following repair and replacement activities. It results in reduced costs and critical path time. For systems	RR and RRE

<u>Description of Code Change or Code Case:</u>	<u>Benefit:</u>	<u>Classification:</u> (See Note 2)
Addenda. This change incorporates Code Case N-416-1.	in radiological controlled areas of the plant, this can result in significant reductions in radiological exposures to plant personnel.	
18. Case N-606, "Similar and Dissimilar Material Welding Using Ambient Temperature Machine GTAW Temper Bead Technique, Section XI, Division 1"	This Case provides specific repair of BWR control rod drive stub tubes in the reactor pressure vessel using ambient temperature GTAW temper bead technique without the Code required elevated preheat and post weld temperature soak. This repair precludes the draining of the RPV, saving critical path outage time, money and radiation exposure.	RR and RRE
19. Case N-576, "Repair of Class 1 and 2 SB-163, UNS N06600 Steam Generator Tubing, Section XI, Division 1" This Case provides new rules for repair of SB-163, UNS N06600 steam generator tubing by using a laser beam weld (LBW) deposit on the inside surface of the tubing.	Approves an industry consensus standard to repair degraded tubes, saving the cost and radiation exposure to replace a steam generator, or extending the time frame when replacement is required.	IIS and RRE
20. Case N-569, "Alternative Rules for Repair by Electrochemical Deposition of Class 1 and 2 Steam Generator Tubing, Section XI, Division 1" This Case provides new rules for electrochemical deposition of a nickel-base alloy on the inside surface of degraded areas of Class 1 and 2 steam generator tubing.	Approves an industry consensus standard to repair degraded tubes, saving the cost and radiation exposure to replace a steam generator, or extending the time frame when replacement is required.	IIS and RRE
21. Case N-562, "Alternative Requirements for Wall Thickness Restoration for Class 3 Moderate Energy Carbon Steel Piping, Section XI, Division 1"	This Case provides an industry consensus standard for adding localized weld overlay on the outside of piping for the purpose of restoring degraded pipe wall thickness, precluding or deferring piping replacement.	IIS and RR
22. Case N-561, "Alternative Requirements for Wall Thickness Restoration of Class 2 High Energy and High Energy Class 3 Carbon Steel Piping, Section XI, Division 1"	This Case provides an industry consensus standard for adding localized weld overlay on the outside of piping for the purpose of restoring degraded pipe wall thickness, precluding or deferring piping replacement.	IIS and RR
23. Case N-557, "In-Place Dry Annealing of a PWR Nuclear Reactor Vessel, Section XI, Division 1"	This Case provides an industry consensus standard for performing in-place annealing of a PWR reactor pressure vessel to improve beltline material toughness subsequent to radiation induced embrittlement.	IIS
24. Case N-528, "Purchase, Exchange, or Transfer of Material Between Nuclear Plant Sites, Section XI, Division 1"	This Case permits use of Code materials supplied by other Owners. Current Section XI reference to the Construction Code prohibits plants constructed to Section III from using Code materials furnished by Owners not possessing a Section III Certificate (N-type or QSC). This can result in considerable cost savings and critical path time reductions when another Owner has the needed materials in stock.	RR
25. Case N-517, "Quality Assurance Program Requirements for Owners, Section XI, Division 1"	Current Section XI reference to the Construction Code prohibits Owners from performing some of the activities that Section III limits to Certificate Holders only, such as qualifying Code material manufacturers and suppliers. This Case provides specific activities an Owner can perform and allows an Owner to use these provisions without possessing a Certificate of Authorization. This results in cost savings and additional sources for	RR

<u>Description of Code Change or Code Case:</u>	<u>Benefit:</u>	<u>Classification:</u> (See Note 2)
26. Case N-504, "Alternative Rules for Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping, Section XI, Division 1"	obtaining materials. This Case provides an industry consensus standard for acceptance of flaws in austenitic piping by depositing full circumferential weld overlay to increase pipe wall thickness rather than by reducing the size of the flaw to meet the acceptance criteria, thereby precluding or deferring piping replacement.	IIS and RR
27. IWA-4223 was revised in the 1999 Addenda to allow Owners to obtain components to an earlier Construction Code using reconciliation instead of having to meet all requirements of the original Construction Code. This action incorporated Code Case N-567.	The 1995 Addenda permitted the use of earlier Editions and Addenda for obtaining components provided all technical requirements of the original Construction Code were met. By allowing the use of earlier Editions and Addenda with reconciliation versus meeting all requirements, the Code provides flexibility to use existing items in the Owner's or manufacturer's warehouses. This results in lower cost with no reduction in safety.	RR

Notes:

1) Items listed in this table are the more important Section XI Repair/Replacement Activity changes and Code Cases approved in the ten years from the 1989 Edition through the 1999 Addenda. Overall, during this time frame, individual actions which resulted in a published Code change, for which the Subgroup on Repairs, Replacements and Modifications was responsible, numbered 68 (which includes the important actions separately listed in the table). In addition, Code Cases and Case revisions, for which the Subgroup on Repairs, Replacements, and Modifications was responsible, numbered 28 (which includes the important Cases separately listed in the table). These Code changes and Code Cases are broken down by primary classification as follows (using the classification in Note 2 below):

Code Changes:

Improved Safety (IS): 1
 Improved Industry Standards (IIS): 40
 Reduced Radiation Exposure (RRE): 0
 Reduced Requirements (RR): 15
 Maintenance of the Code (M): 12
 Total Code Changes: 68

Code Cases/Case Revisions:

Improved Safety (IS): 0
 Improved Industry Standards (IIS): 17
 Reduced Radiation Exposure (RRE): 0
 Reduced Requirements (RR): 10
 Maintenance of the Code (M): 1
 Total of 21 new Code Cases and 7 Case revisions: 28

Of the 68 Code changes, 9 of them were incorporations of Code Cases counted in the total of 28.

In addition, due to the importance of reducing radiation exposure to personnel, 1 out of the 68 total Code changes and 8 out of the 28 Code Cases/Case Revisions resulted in a reduction of radiation exposure, even though the primary classification was not noted as Reduced Radiation Exposure in the overall totals noted above.

2) Code changes and Code Cases are classified using the following classification system and abbreviations:

- **IS** - Improved Safety. Those action items that have an obvious affect on plant safety, such as improving the assurance of pressure boundary integrity or reducing core damage frequency as determined from a risk approach.
- **IIS** - Improved Industry Standard. Improvements including, for example, new or better methods and processes, clarified or improved understanding of requirements due to Code changes, and changes to address industry experience. "Improved industry standard" does not just represent improved performance, although that is also included. Although the classifications of "reduced radiation exposure", "reduced requirements" and "improved safety" may seem to be sub-categories of "improved industry standard", "reduced radiation exposure", "reduced requirements" and "improved safety" have been

separately classified to better define a change or Case. Although some "improved industry standards" do result in increased requirements, where this is the case, the ASME consensus process has determined that the improvements in the industry standard more than justify the increased requirements.

- **RRE** - Reduced Radiation Exposure. Those action items that result in a reduction in radiation exposure from performing the requirements of the 1989 Edition of Section XI.
- **RR** - Reduced Requirements. Those action items that primarily result in an elimination of unnecessary requirements in the 1989 Edition or result in a reduction in costs or human resources. Reduced requirements are not a reduction in the level of safety, but rather are a redefinition of what the appropriate level of safety should be.
- **M** - Maintenance of the Code. General changes associated with maintaining the Code, minor changes, editorial changes and errata.

More than one classification may be used to better define a change or Case. However, the first classification listed in each row is considered the primary classification.

**Important Section XI "SG Liquid Metal Cooled Systems (Division 3)" Code Changes and Code Cases
1989 Addenda through 1999 Addenda**

(Note 1)

<u>Description of Code Change or Code Case:</u>	<u>Purpose/Benefit:</u>	<u>Classification:</u> (See Note 2)
<p>1. New Subsection IME was incorporated into Division 3 (1994 Addenda) which provides rules and requirements for inservice inspection, repair, and replacement of Class MC pressure retaining components and their integral attachments and metallic shell liners and penetrations for Class CC containments.</p>	<p>Adds containment ISI rules for liquid metal cooled operating plants. For example, the United States, Department of Energy (DOE) Fast Flux Test Facility was designed and built to Section III and satisfactorily completed a NRC and ACRS licensing review. It performs ISI as well as containment integrity testing to 10CFR50, Appendix J and needs Subsection IME to document and control future ISI. The reactor is currently on hot standby pending DOE direction for restart. Additionally, Division 3 guidelines are utilized by other international operating reactors, e.g., Japanese MONJU.</p>	<p align="center">IS</p>
<p>2. New rules were provided in Division 3 via 1990 Addenda for detection of water/steam leakage through the sodium interface for Class 1, 2, and 3 components in liquid metal systems.</p>	<p>Incorporates liquid metal cooled reactor operating criteria into the code for leak detection.</p>	<p align="center">IS</p>
<p>3. A revision was made to Division 3 IMA-2300, Appendix VII to adopt the increased provisions for qualification of ultrasonic examination personnel that were added to Section XI, Division 1, in the 1988 Addenda. The change includes specific requirements for UT training and adds requirements for qualification of an NDE Instructor.</p>	<p>Incorporates industry standards for qualification of ultrasonic examination personnel.</p>	<p align="center">IIS</p>
<p>4. A revision was made to IMA-4110, IMA-4111, IMA-4120, IMA-4121, IMA-4122 in Division 3 which expands and clarifies the exemptions from the scope of the repair and replacement rules. The revision also clarifies that the Owner may determine by evaluation that a replacement activity will not affect pump or valve performance parameters. This revision also deletes the exemption from the provisions of IMA-4000 for NPS 1 and smaller items in systems that contain liquid metal or liquid metal cover gas. The revision adds alternative, less restrictive provisions for items in small diameter systems other than systems that contain liquid metal or liquid metal cover gas, to provide assurance that the item will function as designed. The reduced provisions are no longer applicable to Class 1 items larger than the makeup capability limit for the plant, nor for heat exchanger tubing or sleeves or welded tube plugs for heat exchanger tubing. This change is consistent with changes to Division 1 in the 1992 Addenda.</p>	<p>Incorporates changes made in Division 1 but identifies additional criteria for liquid metal cooled plants, e.g., deletes the exemption for NPS 1 and smaller items in systems that contain liquid metal or liquid metal cover gas.</p>	<p align="center">IS</p>

5. New IMA-9000 Glossary was incorporated into Division 3 via 1995 Addenda.	Adds new glossary required to incorporate definitions utilized throughout Division 3. It contains definitions which are unique to liquid metal cooled operating plants.	IIS
---	---	-----

Notes:

1) Items listed in this table are the more important Section XI SG Liquid Metal Cooled Systems (Division 3) changes and Code Cases approved in the ten years from the 1989 Edition through the 1999 Addenda. Overall, during this time frame, individual actions which resulted in a published Code change, for which the Subgroup on Liquid Metal Cooled Systems (Division 3) was responsible, numbered 21 (which includes the important actions separately listed in the table). In addition, Code Cases and Case revisions, for which the Subgroup on Liquid Metal Cooled Systems (Division 3) was responsible, numbered 0 (which includes the important Cases separately listed in the table). These Code changes and Code Cases are broken down by primary classification as follows (using the classification in Note 2 below):

Code Changes:

Improved Safety (IS): 3
Improved Industry Standards (IIS): 4
Reduced Radiation Exposure (RRE): 0
Reduced Requirements (RR): 0
Maintenance of the Code (M): 14
Total Code Changes: 21

Code Cases/Case Revisions:

Improved Safety (IS): 0
Improved Industry Standards (IIS): 0
Reduced Radiation Exposure (RRE): 0
Reduced Requirements (RR): 0
Maintenance of the Code (M): 0
Total Code Cases and Case revisions: 0

In addition, due to the importance of reducing radiation exposure to personnel, 0 out of the 21 total Code changes and 0 out of the 0 Code Cases/Case Revisions resulted in a reduction of radiation exposure, even though the primary classification was not noted as Reduced Radiation Exposure in the overall totals noted above.

2) Code changes and Code Cases are classified using the following classification system and abbreviations:

- **IS** - Improved Safety. Those action items that have an obvious affect on plant safety, such as improving the assurance of pressure boundary integrity or reducing core damage frequency as determined from a risk approach.

IIS - Improved Industry Standard. Improvements including, for example, new or better methods and processes, clarified or improved understanding of requirements due to Code changes, and changes to address industry experience. "Improved industry standard" does not just represent improved performance, although that is also included. Although the classifications of "reduced radiation exposure", "reduced requirements" and "improved safety" may seem to be sub-categories of "improved industry standard", "reduced radiation exposure", "reduced requirements" and "improved safety" have been separately classified to better define a change or Case. Although some "improved industry standards" do result in increased requirements, where this is the case, the ASME consensus process has determined that the improvements in the industry standard more than justify the increased requirements.

RRE - Reduced Radiation Exposure. Those action items that result in a reduction in radiation exposure from performing the requirements of the 1989 Edition of Section XI.

RR - Reduced Requirements. Those action items that primarily result in an elimination of unnecessary requirements in the 1989 Edition or result in a reduction in costs or human resources. Reduced requirements are not a reduction in the level of safety, but rather are a redefinition of what the appropriate level of safety should be.

M - Maintenance of the Code. General changes associated with maintaining the Code, minor changes, editorial changes and errata.

More than one classification may be used to better define a change or Case. However, the first classification listed in each row is considered the primary classification.

Important ASME OM Code Revisions: 1990 – Present
Improved Safety (IS)
<ol style="list-style-type: none"> 1. <i>ISTB 1.3, ISTB 3, ISTB 4, ISTB 5, ISTB 6, and ISTB 7; Comprehensive Pump Test</i> 2. <i>ISTC 4.5, and Appendix II [Condition Monitoring]; ISTC 4.5, ISTC 6.2, and Appendix E [Inservice Exercising for Check Valves]</i> 3. <i>ISTD 1.4 and 8 and Appendix F; Service Life Monitoring of Dynamic Restraints</i>
Reduced Radiation Exposure (RRE)
<ol style="list-style-type: none"> 1. <i>ISTC 1.3, 2, & 4.5.4; Non-Intrusive Techniques</i> 2. <i>ISTC 4.5.4(c), 4.5.6, & 6.2; Disassembly Examination by Sampling Program</i> 3. <i>ISTC 4.5.6, 4.5.7 & 6.2(f); Series Check Valves</i> 4. <i>ISTC 1.2, Exclusions</i>
Improved Industry Standards (IIS)
<ol style="list-style-type: none"> 1. <i>ASME OM Code Reformat</i> 2. <i>ISTA, Appl - Correct PTC-25/API-527 references</i> 3. <i>ISTB 1.3, & 6 Analyses & evaluation of pumps</i> 4. <i>ISTB 6.1, & 6.2 Trending and Acceptance Criteria</i> 5. <i>ISTB 4.7 Data Collection</i> 6. <i>ISTB 5.2.1 ISTB 5.2.3 Pump Testing Methods</i> 7. <i>OM-4 Snubbers</i> 8. <i>ISTD 1, 3.2, 4.3, 4.4, 5.2, 5.3.4, 6, 7, 8, & Appendices C, E, F, G</i> 9. <i>ISTD 1.4, 1.12, 6 & Appendix G-Unacceptable Snubbers</i> 10. <i>ISTD 1.4, 5.2, 7, Appendix D & E Preservice Test Parameters</i> 11. <i>ISTD 3.4 and Appendix H Test Parameters and Methods</i> 12. <i>ISTD 1.4, ISTD 7.7(b), ISTD 7.7.1, ISTD 7.8, Appendix E Inservice Operational Readiness Testing</i> 13. <i>ISTD 1.4, ISTD 7.2.5, ISTD 8.4 Snubber Subcomponents</i> 14. <i>ISTD 6.52-1, 7, 7.4, 7.5.1, 7.6.2, 8.2 Refueling Outage Visual Examination of Snubbers</i>



Robert E. Nickell
President, 1999-2000
212-591-8130
FAX: 212-591-7739
nickellr@asme.org

Three Park Avenue
New York, NY 10016-5990
U.S.A.

**NOTE: IDENTICAL LETTERS
WERE TRANSMITTED TO
COMMISSIONERS DIAZ,
MCGAFFIGAN, DICUS AND
MERRIFIELD**

June 16, 1999

Chairman Shirley Jackson
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Re: Federal Register: April 27, 1999 Vol. 64, No. 80
Industry Codes and Standards; Amended Requirements

Dear Chairman Jackson:

The American Society of Mechanical Engineers (ASME) wishes to bring to your attention its position on the above referenced proposed rulemaking on the elimination of the 120-month requirement for licensees to update their inservice inspection (ISI) and inservice testing (IST) programs.

ASME believes that the benefits gained in implementing the 120-month update significantly outweigh the associated costs. Updating focuses on an evaluation of the entire program to later ASME Code requirements and forms the basis for making necessary changes and enhancements to ISI and IST programs.

It is also our position that the proposed change to eliminate this update requirement and to establish the 1989 Edition of the ASME Boiler and Pressure Vessel (BPV) Code, Section XI, as the baseline (i.e. latest mandatory) edition/addenda is contrary to the spirit of Public Law 104-113 "National Technology Transfer and Advancement Act of 1995." This Act requires federal agencies to make greater utilization of technical consensus standards within the constraints of fulfilling their statutory obligations. While we recognize that the NRC proposed change would include endorsement of later editions/addenda for voluntary implementation by licensees, we are concerned over the long-term implications of selective voluntary updates. The continuous maintenance of ASME Boiler and Pressure Vessel Code Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components and ASME OM-Code for Operation and Maintenance of Nuclear Power Plants enable the incorporation of technological advances that provide cost benefit to the industry while maintaining safety; the proposed rulemaking amendment would weaken the benefits derived from the technical consensus process. ASME's continuous maintenance and improvement of these codes and standards have been based on the assumption of a required 120-month update.

ASME's detailed comments have been submitted in accordance with the Federal Register notice; a copy is attached. In view of the significance of this proposed rulemaking amendment, ASME decided it was important to communicate our position to the Commission. It is our position that maintaining the 120-month update will provide for greater cost benefits to the industry, facilitate NRC's regulatory oversight, and better serve the common objective of public safety.

ASME would be pleased to continue discussion on this proposed amendment as and when deemed appropriate. We thank you for your consideration.

Sincerely,

Robert E. Nickell

Cc: David L. Belden, ASME Executive Director Donald R. Frikken, ASME Sr. Vice President, C&S
June Ling, ASME Assoc. Exec. Director, C&S



Robert E. Nickell
President, 1999-2000
212-591-8130
FAX: 212-591-7739
nickellr@asme.org

Three Park Avenue
New York, NY 10016-5990
U.S.A.

June 16, 1999

The Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attn: Rulemakings and Adjudications Staff

Re: Federal Register Notice (Volume 64, Number 80 April 27, 1999) Solicitation of Public Comments Regarding Proposed Supplement To The Proposed Rule Published On December 3, 1997 (62 FR 63892) That Would Eliminate The 120 Month Requirement For Licensees To Update Their Inservice Inspection And Inservice Testing Programs

To Whom It May Concern:

The American Society of Mechanical Engineers (ASME), also known as ASME International, is a not-for-profit engineering society focused on technical, educational, and research issues. There are 125,000 ASME members worldwide; there are no corporate members. ASME conducts one of the world's largest technical publishing operations, holds some 30 technical conferences and 200 professional development courses each year, and sets industrial and manufacturing codes and standards used throughout the world; there are ASME accredited manufacturers in 58 countries.

The enclosure provides the position of the American Society of Mechanical Engineers, which is in response to the supplement to the proposed rule.

ASME opposes the NRC supplement to the proposed rule for the reasons summarized below and as expanded upon in the enclosure:

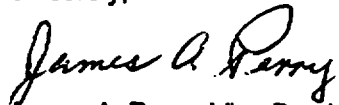
- ◆ The benefits gained in implementing the 120 month update outweigh the cost of making the update.
- ◆ The Codes are living documents that are moving from prescribed repetitive inspection and tests to a more risk-informed and performance-based approach that both the NRC and ASME are moving toward as a high priority.
- ◆ The ASME standards development process and system provide a multiplier effect that captures all Code changes and collective committee experience in direct support of the 120-month update.
- ◆ Elimination of the 120-month update is considered contrary to the spirit of the intended implementation of Public Law 104-113 and OMB A-119.

The 120-month update has served as a mechanism for licensees to keep their ISI and IST programs consistent with current improvements in technology reflected in codes and standards, including improvements affecting health and safety and increased efficiencies, and ongoing assessment of the process by NRC. It provides for systematic implementation of safety enhancements with a minimum of bureaucratic involvement. Updating focuses on an evaluation of the entire program to later code requirements, identifies errors and deficiencies and forms the basis for making corrections and enhancements to ISI & IST Programs. It reflects the latest edition and addenda to the ASME Codes endorsed by the NRC. It will maintain a more current,


consistent and uniform standard for the entire industry that will minimize separate submittals and evaluations on a case-by-case basis between utilities and NRC staff.

The effect of savings from many Code revisions over several Code editions must be taken into account including, for example, the cumulative significant beneficial effect of many small and subtle changes that improved safety and reduced personnel exposure to radiation. Updating to the latest Code requirements will result in a net reduction in work required, personnel exposure and continue to increase economic benefits over the remaining life of the plant.

Sincerely,



James A. Perry, Vice President
Nuclear Codes and Standards



Gerald M. Eisenberg, Director
Nuclear Codes and Standards

Enclosure

Cc with enc

D.A. Powers, Chairman, USNRC-ACRS
Dr. W. D. Travers, Executive Director of Operations-USNRC
Richard E. Feigel, ASME Sr. VP-C&S
Domenic A. Canonico, Chairman ASME B&PV Committee
Members, ASME Board on Nuclear Codes and Standards
Members, ASME Council on Codes and Standards
June Ling, ASME AED C&S

**ASME RESPONSE TO SUPPLEMENT TO
PROPOSED RULE PUBLISHED DECEMBER 3, 1997: 10CFR50.55a**
June 16, 1999

Background

The Nuclear Regulatory Commission is publishing a supplement to the proposed rule published on December 3, 1997 (62 FR 63892) that would eliminate the requirement for licensees to update their inservice inspection (ISI) and inservice testing (IST) programs beyond a baseline edition and addenda of the ASME Boiler and Pressure Vessel Code (BPV Code).

The proposed rule would establish the 1989 Edition of ASME BPV Code, Section XI, as the baseline Code for IST requirements (except for design and access provisions and preservice examination requirements) for pumps and valves that are classified as ASME Code Class 1, 2, or 3 components in currently operating nuclear power plants. As required by 10 CFR 50.55a(b)(viii), references in ASME BPV Code Section XI to OM standards, Parts 4, 6, and 10 will mean the OMa-1988 Addenda to the OM-1987 Edition. The proposed rule would also establish the 1989 Edition of ASME BPV Code, Section XI as the baseline Code for ISI requirements for components (including supports) classified as ASME Code Class 1, 2, or 3.

The NRC proposes to eliminate the requirement to update ISI and IST programs every 120 months for licensees applying the baseline or later editions and addenda of the ASME Code incorporated by reference in the regulations. As proposed, licensees may update their ISI and IST programs to subsequent Code editions or addenda that have been incorporated by reference in the regulations in their entirety without prior NRC approval when implemented in accordance with the regulations. A licensee intending to implement only a portion of a subsequent Code edition or addenda incorporated by reference in the regulations would be required to obtain prior NRC approval by demonstrating that the specific portion of the edition or addenda presents an acceptable level of quality and safety, and that all related requirements are satisfied.

The NRC proposes that the baseline Code for ISI requirements for metal and concrete containment (Classes MC and CC) components and their integral attachments be the 1992 Edition with the 1992 Addenda of Subsections IWE and IWL of Section XI of the ASME BPV Code. Finally, the proposed rule would require that ASME Code Class 1, 2, or 3 components conform to the requirements in Appendix VIII of Section XI of the ASME BPV Code, 1995 Edition with the 1996 Addenda.

The NRC believes that the overall level of safety achieved by adherence to a baseline edition or addenda of the ASME Code incorporated by reference in the regulations would be sufficient and adequate, and that unnecessary burden might be placed upon licensees by the required updating of their ISI and IST programs. The NRC also believes that the establishment of a baseline edition and addenda of the ASME Code for ISI and IST requirements would ensure adequate protection of public health and safety without periodic updating of ISI and IST programs at nuclear power plants.

ASME Response

ASME opposes the NRC supplement to the proposed rule described above for the following reasons:

1. **The benefits gained in implementing the 120 month update outweigh the costs of making the update**
 - ◆ The Federal register notice cites a cost of approximately \$200,000 for the 120 month update for each licensee, or \$20,000 per year. This is not a significant cost when you consider the potential number of relief requests if the update were eliminated.

By baselining the code to the 1989 Edition, licensees will be forced to submit numerous relief requests that will be required to implement portions of later editions of the Code. This will result in use of greater licensee and NRC resources than if the most recent Edition of the Code were imposed in the regulations.

- ◆ Representatives of some utilities have requested elimination of the 120 month update based on its expense. From an administrative view, the update would clearly call for an increase in the budget for a particular department once every 10 years. This would appear attractive to eliminate. However, the effect of savings from many Code revisions over several Code editions must be taken into account. Updating to the latest Code requirements will result in a net reduction in work required, personnel exposure and economic benefits that will continue over the remaining life of the plant. For an example, a code action to reduce inservice inspection (ISI) of Class B-J piping welds could save several hundred thousand dollars per plant.
- ◆ Since the 1989 Edition of the Boiler and Pressure Vessel Code (the most recent edition referenced in the regulation), there have been numerous revisions and Code Cases that have been characterized as economically beneficial to the utilities. The contributions to safety are also significant. A primary justification for the revisions and Code Cases is to achieve ALARA objectives. Examples follow:
 - Cases N-458-1 and N-485-1 permit surface examination of painted surfaces. This reduces personnel exposure by eliminating the need for paint removal before a surface examination, and repainting after.
 - Case N-463-1 provides criteria for analytical evaluation and acceptance of flaws that would otherwise result in component repair or replacement, avoiding exposure of personnel engaged in repair/replacement activities.
 - Case N-481 provides criteria for analytical evaluation and acceptance of flaws, that would otherwise require nondestructive examination. Thus, exposure of personnel engaged in repair/replacement activities is avoided.
 - Case N-480, which introduces examination and analytical evaluation methods for pipe wall thinning due to single-phase erosion and corrosion, was initiated to address safety concerns. It has recently been superseded by Case N-597.
 - Case N-557, which provides criteria for in-place dry annealing of a PWR reactor vessel, also addresses safety concerns.
 - Case N-560 permits reduction in examination of Class 1 Category B-J piping welds from 25% to 10%, provided a specified risk-importance ranking selection process is followed. The selection process has been shown to improve safety, because it focuses examinations on critical areas in place of the current shotgun approach. The reduction also reduces NDE personnel exposure
 - Cases N-509, N-524, and N-547 reduce examinations with reduction in plant personnel exposure.
- ◆ Updating will maintain a more current, consistent and uniform standard for the entire industry that will minimize separate submittals and evaluations on a case by case basis between utilities and NRC staff.
- ◆ Updating to the more recent ASME codes would provide for more cost-effective inspections and tests at lower occupational exposure.
- ◆ It took over 9 years for the NRC to produce an update to 10CFR50.55a to address later editions of ASME Section III, Section XI, NQA-1 and to introduce a baseline for the OM Code for mandatory requirements in the regulation. With voluntary updates, it would appear that there would be a reduction in emphasis on evaluation and less timely endorsement of Code changes by NRC staff.

- ◆ Since major updates of the ISI & IST programs underwent major improvements at the time of the update, a disparity over time will occur if these updates are not required in the future. Updating focuses on an evaluation of the entire program to later code requirements, identifies errors and deficiencies and forms the basis for making corrections and enhancements to ISI & IST Programs.---
- ◆ The update provides for standardization and consistency in implementation of requirements. If future changes to the ASME Code become voluntary, the impact on changes to the range of code editions and addenda applied by licensees is expected to be great. This will have a negative impact due to inconsistent implementation, and lack of uniformity and consistency in verifying conformity.

2. The Codes are living documents that are moving from prescribed repetitive inspection and tests to a more risk-informed and performance-based approach that both the NRC and ASME are moving toward as a high priority.

One of the arguments in support of the proposed NRC action is that the Code is "Mature". In a sense this is true, in terms of years since inception; however, Section XI is in the midst of a change in philosophy and scope, moving from prescribed repetitive inspections to risk-informed programs. Lessons learned from the pilot applications are being used to support Code Case actions. Section XI inspection requirements were originally based on fossil service experience, and recent revisions to the Code implement the lessons learned in over 25 years of nuclear power plant operating experience. Many of these have been implemented since the 1989 edition, and others are in development. The NRC has not provided a basis to support the contention that the 1989 Code is "mature" for current application.

The Code is a living document and it would be improper to ignore that fact by effectively locking the Regulations into one edition and addenda.

3. The ASME standards development process and system provide a multiplier effect that captures all Code changes and collective committee experience in direct support of the 120 month update

- ◆ Operational experience has, and will continue to be incorporated in ASME Code revisions to assure appropriate implementation of safety provisions and ALARA considerations.
- ◆ A broad-based group of experts collectively produce Code changes using the consensus process.
- ◆ Research resources and new technology are available as input to the committee.
- ◆ User feedback to the committee on operating experience, application and lessons learned results in needed refinement and adjustment to the Code. There has been a cumulative, significant, beneficial effect of small and subtle revisions that improved safety and reduced personnel exposure to radiation. These were related not only to the reductions in the number and extent of examinations, but also to new methods for performing repairs and flaw analysis.
- ◆ The committee process provides continuous addenda & edition updates. Thus, with timely endorsement, the 120 month update ensures that licensees reevaluate and update ISI/IST programs to reflect experience and Code improvements from Code application. With more timely NRC endorsement of later code editions and addenda in the future, licensees should be encouraged to update their ISI and IST programs on a more frequent basis; e.g. at the time of each new edition. This would reduce the number of changes being made at a given time and would reduce the administrative cost burden of making the update. With elimination of the 120 month update, the owners groups, NEI and EPRI would continue to approach the NRC staff directly for relief on behalf of their utility members. A net increase on the number and detail of licensee submittals associated with ISI & IST would be expected. The NRC staff would deal with the utilities one-on-one more often on issues that to this point have been resolved by code committee action. While called a 'voluntary update, each

request would be scrutinized and each applicant would need to provide justification for adoption of portions of code. This would have the affect of skewing individual ISI and IST programs in a manner that fosters increased inconsistency in implementing Code requirements as time passes with reduced oversight by NRC. There is a risk that picking and choosing of selected revisions may result in omission of correlative revisions or requirements, introducing ambiguities.

- ◆ The staff decisions on these one-at-a-time issues would not receive the same scrutiny as that given to changes in the Regulation. This will have the effect of diminishing the role of the consensus standards development process.
- ◆ The NRC position under IX Backfit Analysis of this Supplemental Proposed Rule supports the endorsement of the later ASME Code by the statement that "the NRC has reviewed those comments and has concluded that neither NUBARG nor NEI raises legal concerns that would alter the previous legal conclusion that the Backfit Rule does not require a backfit analysis of routine updates to incorporate new ASME Code ISI and IST requirements."
- ◆ Elimination of 120 month update could have major detrimental impact on the committee infrastructure. By baselining the 1989 Edition of the BPV Code, there will be little incentive for US utilities to provide resources to support further Code revisions. It is questionable whether US utilities, manufacturers, laboratories, insurance companies, consultants, designer-constructors and others would maintain significant committee participation, except to pursue specific needs. Innovation would be discouraged. This contrasts with the experience of the last 30 years when Code Committees, through an established infrastructure, produced changes to the Code which relied upon broad based research and operating experience.
- ◆ The update provides for a continuous improvement process. Initially the Code was written in a conservative manner until more experience and advancements in technology were realized. Changes that were made to eliminate or reduce certain examinations served to reduce occupational exposure in certain areas. With regard to the OM Code, the current edition (1998) provides a baseline for significant improvements in testing efficiency through the use of risk insights and operational experience. This provides for a more effective use of resources and provides for more cost-effective inspection. This becomes significant with initiatives in risk-informed regulation that should reference the appropriate current Code requirements.
- ◆ The process used over the past 30 years involving updating the ISI & IST Programs every 120 months is well known and is working very well. If the process were changed to delete the update requirement, it would involve many unknowns that cannot be predicted at this time. This uncertainty is unacceptable.

4. Elimination of the 120-month update is considered contrary to the spirit of the intended Implementation of Public Law 104-113 and OMB A119

- ◆ Public Law 104-113, the National Technology Transfer and Advancement Act of 1995 OMB and Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities" addresses the use of voluntary consensus technical standards by Federal Agencies. Supplementary Information, item X. "National Technology Transfer and Advancement Act of 1995", indicates the need for the NRC to evaluate the relationship of the public law to the proposal to eliminate the 120 month update and, as a result, determine whether a report (or periodic reports) must be provided to the Office of Management and Budget if the 120-month update requirement is eliminated. We believe that elimination of the 120-month update is contrary to the spirit of the intended implementation of PL 104-113 and OMB A-119. Although the NRC would consider endorsement of later editions of the BPV Code and licensee implementation on a voluntary basis, the current proven process would be replaced by one that introduces many unknowns and uncertainties. The resultant required evaluation and reports referenced in item: X. National Technology Transfer and Advancement Act of 1995

would cause an increased burden on NRC staff that would be avoided by retaining the 120-month update.

- ◆ By baselining to the 1989 Code Edition, imposing the 1992 Edition (with 1992 Addenda) for Subsections IWE & IWL, and imposing the 1995 Edition (with 1996 Addenda) of Section XI for Appendix VIII, the NRC is applying only selected parts of different code Editions on licensees. This will create confusion regarding proper overall implementation of the Code, and could have an adverse impact on maintaining proper configuration control.
- ◆ Since states routinely update references in their regulations to require the latest editions of ASME codes and standards, the proposed rulemaking would create greater inconsistencies between Federal and state requirements. Such inconsistencies between Federal and state jurisdictions would have a negative impact on Code users.

Conclusion

The 120-month update has served as a mechanism for licensees to keep their ISI and IST programs consistent with current improvements in technology reflected in codes and standards, including improvements affecting health and safety and increased efficiencies, and ongoing assessment of the process by NRC. It provides for systematic implementation of safety enhancements with a minimum of bureaucratic involvement. Operational experience has, and will continue to be incorporated in ASME Code revisions to assure appropriate implementation of safety provisions and ALARA considerations. The 120-month update reflects the latest edition and addenda to the ASME Codes endorsed by the NRC. The NRC need only review and approve new editions and addenda and to incorporate them by reference into 10CFR50.55a to have the provisions incorporated by licensees. Improvements in the Code that reduce burden are also implemented at the same time. It will maintain a more current, consistent and uniform standard for the entire industry that will minimize separate submittals and evaluations on a case-by-case basis between utilities and NRC staff. It would facilitate the transition from the deterministic approach to a more risk-informed and performance-based approach that both the NRC and ASME are moving toward as a high priority. Without it, the entire burden of operational continuous improvement and upgrade of programs rests with the licensees, with diminished oversight by the NRC, and only those very large and infrequent enhancements that pass the backfit rule would be mandated in the regulation.

The Nuclear Utility industry is experiencing, and will continue to experience, significant restructuring as deregulation is implemented. Chief Nuclear Officers and management teams will change. Industry events, primarily through aging and technology improvements will drive changes to the code. The code is a reflection of these forces and will be upgraded. As stakeholders in this proposal, the ASME, NRC and Utilities have unique and interdependent roles in the regulatory framework that maintains the pressure boundary integrity and operational readiness of mechanical equipment. This is key to maintaining nuclear safety. The impact of the proposed rulemaking could be to upset the balance of that regulatory framework.