



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064**

March 7, 2000

Steven Turrin, Region IV President
Professional Reactor Operator Society
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, Texas 77483

SUBJECT: PROFESSIONAL REACTOR OPERATOR SOCIETY MEETING

Dear Mr. Turrin:

This refers to the meeting conducted in the Region IV office on February 15, 2000. This meeting related to items of interest to the Region IV chapter of the Professional Reactor Operator Society. A copy of the Region IV organization chart was presented to attendees and is attached.

Five topic areas were discussed in general terms during the meeting.

1. Potential changes to the 50.59 process and their impact on control room operations, with the principle issue being the current agency direction to enhance the performance basis and risk insights of our expectations in this area.
2. Permanent spent fuel storage technologies, with emphasis on the types of facilities approved by the NRC, with further details as shown in the attached reproduction from the NRC's web page on this issue.
3. The revised reactor oversight process and the related baseline inspection program, again, with related information as shown in the attached reproduction from the NRC's web page on this issue.
4. Operator overtime, with the emphasis being on the NRC's current interactions with stakeholders on this issue.
5. Operator stress, with the emphasis being the Professional Reactor Operator Society attendees expressed the opinion that this issue was being driven primarily by nonregulatory factors, such as deregulation and grid stability, with some impact from regulatory items such as the maintenance rule and improved technical specifications.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, code of Federal Regulations, a copy of this letter will be placed in the NRC's Public Document Room.

Steven Turin

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Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

Original signed by
J. L. Pellet

Arthur T. Howell III, Director
Division of Reactor Safety

Enclosures:

1. Attendance List
2. Presentation

cc:

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DMB (IE 45)

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A. Howell III

H. Christensen, NRR

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ENCLOSURE 1

ATTENDANCE LIST

S. Turrin, RIV President
Professional Reactor Operator Society

D. Flowers, RIII Vice President
Professional Reactor Operator Society

D. Dennis, Arkansas Nuclear One Facility Representative
Professional Reactor Operator Society

D. Dees, Wolf Creek Facility Representative
Professional Reactor Operator Society

P. Lawson, Wolf Creek Facility Representative
Professional Reactor Operator Society

J. Kahanca, Cooper Facility Representative
Professional Reactor Operator Society

S. Jobe, Cooper Facility Representative
Professional Reactor Operator Society

J. Domino, Cooper Facility Representative
Professional Reactor Operator Society

D. Desaulniers, Human Factors Analyst
Operator Licensing, Human Performance and Plant Support Branch
Division of Inspection Program Management
Office of Nuclear Reactor Regulation

D. Powers, Chief
Engineering and Maintenance Branch
Division of Reactor Safety

J. Pellet, Chief
Operations Branch
Division of Reactor Safety

M. Runyan, Senior Reactor Inspector
Engineering and Maintenance Branch
Division of Reactor Safety

R. Lantz, Operations Engineer
Operations Branch
Division of Reactor Safety

ENCLOSURE 2

MEETING PRESENTATIONS

U. S. Nuclear Regulatory Commission Region IV



E. W. Merschoff
Regional Administrator
NRC Region IV

T. P. Gwynn
Deputy Regional
Administrator

E. L. Williamson
Director
Office of Investigation

- Lynda Baker, Sec'y
- Jonathan Armenta
- Dennis Boal
- Gene Fish
- Mike FitzGibbon
- Philip Joukoff
- Virginia VanCleave

- Jo Ann Carson, Sec'y
- Carol J. Gordon, Sec'y

B. W. Henderson
Public Affairs Officer

K. D. Smith
Regional Counsel

C. A. Hackney
Regional State Liason
Officer

T. H. Andrews
Incident Response
Coordinator

G. F. Sanborn
Director
Allegation Coordination/
Enforcement Staff

- Harry Freeman, AC/ES
- Michael Vasquez, ES
- Russ Wise, SAC

D. D. Chamberlain
Director
Division of Nuclear
Materials Safety

A. T. Howell III
Director
Division of Reactor
Safety

K. E. Brockman
Director
Division of Reactor
Projects

K. J. Hamill
Director
Division of Resource
Mngmnt. & Admin.

- Judy Kilcrease, Sec'y
- Nancy Leary, Sec'y
- Connie Spagnoli, Sec'y

Linda Howell
Senior Materials
Analyst

- Bill Jones, SRA
- Jeff Shackelford, SRA
- Lynn Berger, Sec'y
- Cheryl Goines, Sec'y
- Nancy Hodges, Sec'y

Elmo Collins
Deputy Director

- Linda Cooley
- Janet Staub, Sec'y

Karen League, RPO
Human Resources
Staff

Dean Papa
Chief, Information
Resource Management

Peter Krayter
Chief, Financial
Resource
Management Branch

Vacant
Senior Technical
Analyst

- Lucy Owen, Div. Sec'y
- Denise Freeman, Sec'y
- Vacant, Sec'y

- Joseph Lopez
- Sandy Lindsay

- Debbie Bacon
- Debbie Bujol
- Robert Carpenter
- Phil Longdo
- Michael Phillips
- Jody Talbot
- Contractors

- Lanell Allen
- Ron Bath
- Guy Compton

- James Buchanan
- Laura Cavallo
- Kathy Gardin
- Carol Hill
- Nancy Holbrook
- Marissa Kuyawa
- Ann Mattila
- Stacey Rosenberg
- Contractors

- Arlene Shaw

Dale Powers,
Chief
Engr. & Maint. Br.

- Cliff Clark
- Rick Deese
- Lee Ellershaw
- Paula Goldberg
- Claude Johnson
- Bill McNeil
- Ray Mullikin
- Rebecca Nease
- Chuck Paulk
- Mike Runyan
- John Whittemore

Larry Yandell
Chief
TSS

- Grant Larkin, RE
- Loretta Williams, TSA
- Leonard Willoughby, RE

Chuck Cain, Chief
Nuclear Materials
Licensing Branch

- Vivian Campbell
- Jackie Cook
- Tony Gaines
- Christi Hernandez
- Jim Montgomery
- Colleen Murnahan
- Sue Triflett
- Jack Whitten

Linda Howell, Chief
Nuclear Materials
Inspection Branch
(Acting)

- Bob Brown
- Jeffrey Cruz
- Randy Erickson
- Bob Evans
- Emilio Garcia
- Richard Leonardi
- Greg Morell
- Kent Pendergast
- Sabra Pope
- Dave Skov

Blair Spitzberg,
Chief Fuel Cycle &
Decommissioning

- Wayne Britz
- Rachel Carr
- Lou Carson
- Vince Everett
- Danny Rice
- Judith Weaver

John Pellet, Chief
Operations
Branch

- Howard Bundy
- Paul Gage
- Laura Hurlley
- Gary Johnston
- Ryan Lantz
- Steve McCrory
- Tom McKernon
- Mike Murphy
- Tom Stetka

Gail Good, Chief
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Branch

- Bernadette Baca +
- Dan Carter
- James Dodson
- Bruce Earnest
- Paul Elkman
- Bill Maier
- Blair Nicholas
- Larry Ricketson
- Dennis Schaefer
- Michael Shannon

Joe Tapia
Chief
Branch A

- Dave Graves, SPE
- Don Allen, PE

Comanche Peak
Tony Gody, SRI
Scott Schwind, RI
Vacant, RI
Carole Austin, SS

South Texas
Neil O'Keefe, SRI
Gilbert Guerra, RI
Vacant, RI
Lenora Reyna, SS

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Peter J. Alter, RI
Mary J. Spivey, SS

William Johnson
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- Ron Kopriva, SPE
- Ray Azua, PE

Callaway
Vincent Gaddy, SRI
John Hanna, RI
Dawn Yancey, SS

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Frank Brush, SRI
Jimmy Dyke, RI
Shirley Allen, SS

River Bend
Troy Pruett, SRI
Norman Garrett, RI
Max Schneider, RI
Pat Smith, SS

Charles Marschall
Chief
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- Dave Loveless, SPE
- Wayne Sifre, PE

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Jeffery Clark, SRI
Mike Hay, RI
S. Neddenriep, SS

Fort Calhoun
Wayne Walker, SRI
Clyde Osterholtz, RI
Nancy Curley, SS

Phil Harrell
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Branch D

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- Vacant, PE

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Kathy Weaver, RI
Vacant, RI
Vicki High, SS

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D. Corporandy, RI
Nancy Salgado, RI
Vacant, RI
Tammy Buchan, SS

Waterford
Tom Farnholtz, SRI
Jack Keeton, RI
Ann Youngs, SS

Linda Smith
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- Greg Pick, SPE
- Jim Melfi, PE

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Javier Rodriguez, RI
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Dyle Acker, RI
Vacant, RI
Jean Gellis, SS

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Jim Sloan, SRI
John Russell, RI
John Kramer, RI
S. Neidholdt, SS

TIP:15 - Spent Nuclear Fuel Storage

[Technical Issues Index](#) | [News and Information](#) | [NRC Home Page](#) | [E-mail](#)

Background

For years, nuclear power plants have temporarily stored used fuel, known as "spent fuel," in water pools at the reactor site. Periodically, about one-third of the nuclear fuel needs to be unloaded and replaced with fresh fuel. It was anticipated that the spent fuel would be reprocessed, with usable portions of the fuel to be recycled and the rest to be disposed of as waste. However, reprocessing did not successfully develop commercially.

Congress gave the Department of Energy (DOE) responsibility for developing permanent disposal capacity for the spent fuel and other high-level nuclear waste. Currently, DOE, as directed by Congress, is investigating a site in Yucca Mountain, Nevada, for a possible disposal facility, which would be built and operated by DOE and licensed by the Nuclear Regulatory Commission (NRC), if found appropriate.

Until the repository is ready --projected to be about 2010--spent nuclear fuel continues to be stored primarily in specially designed, water-filled pools at individual reactor sites around the country. This storage is authorized under the same NRC-issued license that authorizes reactor operation.

In the late 1970's and early 1980's, the need for alternative storage began to grow when pools at many nuclear reactors began to fill up with stored spent fuel. Utilities began looking at options for increasing spent fuel storage capacity. Current regulations permit reracking and fuel rod consolidation, subject to NRC review and approval, to increase the amount of spent fuel that can be stored in the pool. Both of these methods are constrained by the size of the pool. Another option for increased storage capacity is storage in an independent spent fuel storage installation (ISFSI). Such storage may be either at the reactor site or elsewhere. The spent fuel may be stored in wet or dry ISFSI's. Over the last decade there has been increased interest in dry cask storage on-site by licensees to provide additional capacity for storing spent fuel. In 1982, Congress passed the Nuclear Waste Policy Act which addressed the spent fuel storage problem. The Act directed NRC to approve means of interim dry storage and to do so by rulemaking, omitting site-specific evaluations "to the maximum extent practicable." NRC amended its regulations to authorize nuclear power plant licensees to store spent fuel at reactor sites in NRC-approved dry storage casks under a general license, without submitting an application for a specific license to store spent fuel at a particular site. For each approved dry storage cask, the NRC conducted a technical review of the cask design to ensure it would be safe and acceptable for use at any licensed nuclear power plant site in the country.

Discussion

The NRC has approved eight cask designs for use under the general license which are tabulated in 10 CFR 72.214. Casks can be made of metal or concrete and are either placed horizontally or stand vertically on a concrete pad above ground. The casks currently used to store spent fuel, including those used under both site specific and the general license options are listed below.

Spent fuel is currently stored at eleven power plant sites, and at an interim storage facility located at the Idaho National Environmental and Engineering Laboratory near Idaho Falls, Idaho. The power plants employing an ISFSI are noted in the table below.

The NRC is also reviewing an application from Private Fuel Storage to build an away-from-reactor independent spent fuel storage installation on the reservation of the Skull Valley Band of Goshute Indians in Utah.

The NRC approves the designs for spent fuel dry storage systems. Use of an NRC-approved dry storage system at a nuclear power plant is included within the envelope of the previously approved nuclear power plant's site, with all the seismic studies, environmental evaluations, security plans, etc., applicable to the nuclear power plant. The casks used in the dry storage systems are designed to resist floods, tornado missiles, temperature extremes, etc. They will hold spent fuel already cooled in the spent fuel pool for at least 5 years. Typically, the maximum heat generated from the 24 fuel assemblies stored in each cask is less than that given off by 240 100-watt light bulbs, and even that decreases with time.

Before using the dry storage cask, a licensee must verify that the various conditions expected at that specific nuclear power plant site (including earthquakes, tornadoes, etc.) fit within the general set of conditions reviewed by the dry storage cask vendor and by the NRC in approving the design. The licensee must also satisfy the conditions specified in the Certificate of Compliance issued to the vendor by the NRC at the conclusion of the rulemaking. These conditions are also binding on any and all licensees who use the dry storage cask at any specific nuclear power plant.

All of the licensee's actions at the nuclear power plant site, including those related to spent fuel storage are subject to NRC inspection. This process further ensures public protection and is consistent with Congressional scheme, which NRC has followed.

Dry spent fuel storage in casks is therefore considered to be safe and environmentally sound, and it is also becoming cheaper and may provide, in some cases, substantial cost benefits for a licensee and its ratepayers.

NRC-Approved Dry Spent Fuel Storage Designs

Vendor	Storage Design Model	Capacity (Assemblies)	Storage Design Approval Date	Certificate of Compliance Approval Date
General Nuclear Systems, Incorporated	Metal Cask CASTOR V/21	21 PWR	09/30/1985	08/17/1990
Transnuclear West, Inc.	Concrete Module NUHOMS-7	7 PWR	03/28/1986	
Westinghouse Electric	Metal Cask MC-10	24 PWR	09/30/1987	08/17/1990
Foster Wheeler Energy Applications, Incorporated	Concrete Vault Modular Vault Dry Store	83 PWR or 150 BWR	03/22/1988	

NAC International	Metal Cask NAC S/T	26 PWR	03/29/1988	08/17/1990
NAC International	Metal Cask NAC-C28 S/T	28 Canisters (fuel rods from 56 PWR assemblies)	09/29/1988	08/17/1990
Vectra Technologies, Incorporated.	Concrete Module NUHOMS-24P	24 PWR	04/21/1989	
Transnuclear, Incorporated	Metal Cask TN-24	24 PWR	07/05/1989	11/04/1993
NAC International	Metal Cask NAC-128/ST	28 PWR	02/01/1990	
Pacific Sierra Nuclear Associates	Ventilated Cask VSC-24	24 PWR	03/29/1991	05/07/1993
Vectra Technologies, Incorporated	Concrete Module Standardized NUHOMS-24P NUHOMS-52B	24 PWR 52 BWR	N/A	01/23/1995
NAC International	NAC-STC	26 PWR	07/18/95	

Note: PWR - Pressurized-Water Reactor; BWR - Boiling-Water Reactor

Source: Appendix G, [NRC Information Digest \(NUREG-1350, Volume 10\)](#)

NRC Dry Spent Fuel Storage Licensees

Reactor Name Utility	Date Issued	Vendor	Storage Model
Surry 1, 2 Virginia Electric & Power Company	07/02/1986	Generals Nuclear Systems, Incorporated	Metal Cask CASTOR V/21 TN-32 NAC-128 CASTOR X/33 MC-10
H. B. Robinson 2 Carolina Power & Light Company	08/13/1986	Transnuclear West, Incorporated	Concrete Module NUHOMS-7
Oconee 1, 2, 3 Duke Power Company	01/29/1990	Transnuclear West, Incorporated	Concrete Module NUHOMS-24P
Fort St. Vrain Public Service Company of Colorado	11/04/1991	Foster Wheeler Energy Applications, Incorporated	Modular Vault Dry Store
Calvert Cliffs 1, 2 Baltimore Gas & Electric Company	11/25/1992	Transnuclear West, Incorporated	Concrete Module NUHOMS-24P
Palisades Consumer Power Company	Under General License	Pacific Sierra Nuclear Associates	Ventilated Cask VSC-24
Prairie Island 1, 2 Northern States Power Company	10/19/1993	Transnuclear, Incorporated	Metal Cask TN-40
Point Beach Wisconsin Electric and Power Company	Under General License	Pacific Sierra Nuclear Associates	Ventilated Concrete VSC-24
Arkansas Nuclear 1 Entergy Operations, Inc.	Under General License	Pacific Sierra Nuclear Associates	Ventilated Concrete VSC-24
Davis-Besse Toledo Edison Company	Under General License	Transnuclear West, Incorporated	Concrete Module NUHOMS-24P
North Anna Virginia Electric & Power Co.	6/30/98	Transnuclear, Inc.	Metal Cask TN-32

In March, 1999, operations of the Fort St. Vrain facility were transferred to the Idaho National Environmental and Engineering Laboratory

Source: Appendix G, [NRC Information Digest \(NUREG-1350, Volume 10\)](#)
September 1999

Image Not
Available

Revised Reactor Oversight Process Frequently Asked Questions

[[Revised Reactor Oversight](#) | [Nuclear Reactors](#) | [NRC Home Page](#)]

- [General Overview Questions](#)
 - [Questions concerning cornerstones?](#)
 - [Questions concerning Performance Indicators \(PIs\)](#)
 - [Questions concerning the Baseline Inspection Program](#)
 - [Questions concerning the assessment process](#)
 - [Questions concerning the Significance Determination Process \(SDP\)](#)
 - [Questions concerning the pilot plant program](#)
 - [Questions concerning the allegation program?](#)
 - [Questions concerning the enforcement program](#)
 -

General Overview Questions

What is this new oversight program and how is it different from the current system?

The current inspection program was designed for an industry which was more likely to experience performance problems than is currently the case. Therefore, the existing programs are aimed at observing plant activities, encouraging improved performance, and responding to operational problems as they occur.

The new inspection program recognizes that most plants are now performing substantially better than did the plants of the mid-1980's. For example, in 1985 the typical plant had about seven reactor trips ("scrams") a year. In the past year, the number of reactor scrams averaged less than one per year per plant. This is an important measure of plant operations, and demonstrates the significant improvement in performance at most plants.

The new program is designed to focus the agency's resources on the relatively small number of plants which continue to have performance problems, while reducing the regulatory impact on plants that perform well. This will result in reduced inspections for those plants which have demonstrated that they perform within the "safety cornerstone" criteria. These plants will receive a baseline inspection program performed by NRC resident inspectors and by inspectors from the regional offices.

The baseline inspection program is designed to raise flags when potential problems arise. These can serve to signal both the licensee and the NRC that efforts are necessary to diagnose the root causes of such problems. By way of contrast, the traditional NRC inspection program was more diagnostic, looking for problems, their causes, and solutions no matter how the plant was performing. The new baseline program is also "risk-informed" -- it concentrates on those plant activities and systems which have the greatest potential impact on plant safety.

Plants which do not meet the "safety cornerstone" objectives will have an increased inspection program, focusing on areas of declining performance. There will also be "reactive" inspections beyond the baseline program, even at plants performing well, if there are operational problems or events the NRC believes require greater scrutiny. Generic problems, affecting some or all plants, may require additional inspections.

The assessment program will be substantially different from the previous process. Performance assessment previously involved three processes:

a. **Plant Performance Review** - a review of each plant was conducted every six months to assess events, inspection findings, and other data. This review was done to plan future inspections and to identify those plants with declining performance that required further NRC action.

b. **Senior Management Meeting and Watch List** - the plant performance review was used to identify those plants that required further discussion by NRC senior managers to determine if additional regulatory action was needed. The senior managers reviewed the information assessing plant performance. The managers designated those plants warranting heightened NRC monitoring as being on a "watch list." These "watch list" plants were then discussed at a public meeting with the Commission.

c. **Systematic Assessment of Licensee Performance** - About every 18 months, the NRC staff performed a separate review of the performance of each plant, preparing a Systematic Assessment of Licensee Performance (SALP report). This report included a numerical rating of the plant in four categories--plant operations, maintenance, engineering, and plant support--as well as providing a narrative discussion of overall performance. For plants with performance problems, the SALP period could be shortened to as little as once a year, while plants with superior performance were assessed every 24 months. 5/10/99

The NRC began a review of this assessment process in 1996, including an evaluation by an outside consulting firm. The staff review and that of the consultants underscored the need for an assessment process that was more timely and more objective. The new risk-informed oversight framework is NRC's answer to these concerns.

Why transition from current regulatory approach to a risk-informed oversight process?

The NRC and the nuclear power industry are maturing from an environment characterized by licensing, construction, plant start-up, and the associated growing pains, to one of successful safe operation, especially during the past several years. We have gained much knowledge over the past half-century due to the work our technical staff and our inspectors have performed and their diligence in identifying safety related issues. As we enter the next century we will concern ourselves with maintaining safety by using risk-informed oversight processes based upon the past experience gained from many years of successful operation and inspection. The NRC Commission, key management at the Office and Regional level, industry and public groups agree with the general conceptual approach to risk-informed oversight. 5/10/99

When will NRC implement this change?

The short answer to this question is that initial implementation of the new risk-informed oversight process will begin in January 2000, with full implementation by January 2001. However, the agency will run, in cooperation with the industry, nine plant pilot projects, at least two in each Region. The pilot projects will begin in June 1999. 5/10/99

How will NRC's Enforcement Actions be affected?

Any changes in the NRC's enforcement program will be developed after the revised inspection and oversight program is approved. Until that time, the NRC will continue to issue Notices of Violation when significant violations are identified during inspections. The Notice of Violation requires the utility to take corrective action to prevent a recurrence of the violation and may include a fine.

The new enforcement approach is a shift from the past implementation of the NRC enforcement function. However, it will continue to maintain a compliance focus by use of NCV's, NOV's, and escalated action for a small group of issues. This will be done as the agency moves to a more risk-informed and performance based regulatory process. The agency's regulatory response will continue to escalate based on the safety significance of issues and overall performance of a licensee. There will continue to be increased regulatory scrutiny and deterrence for poor performance. This should result in maintaining a satisfactory level of performance as licensee's strive to avoid regulatory costs associated with increased inspection and attention by NRC. Because the assessment process will be performing many of the functions that the enforcement process was providing in the past, there is a reduced need for the process of varying severity levels and the imposition of civil penalties. The consistent regulatory message this process allows should also be more efficient and effective. Although, the perception of the total abandonment of civil penalties may initially result in a negative public reaction, the overall approach to assessment, inspection and enforcement should, in the long term, provide assurance to the public that the NRC is fulfilling its mission of protecting public health and safety. Finally, this approach should result in allowing licensee's to prioritize and correct non-significant safety violations of our requirements without regulatory involvement. This should promote appropriate correction of deficiencies in a less adversarial manner. 5/7/99

What processes will be used to assure the new approach even works, and how will we know before the January 2000 implementation date?

NRC has established a Transition Task Force which is putting together the implementing procedures. The Transition Task Force is an interdisciplinary team representing a cross section of agency experts in the fields of nuclear engineering, science, inspection, physics, training and management. 5/8/99

Like any new process the test of time will tell how well it works. We expect change and modification as we continue the process and learn new lessons from our activities. Before the January 2000 formal implementation two studies will be performed. The first, conducted in February 1999, was a limited feasibility review of the inspection findings using the significance determination process and the new reactor oversight process. This review determined that it is feasible to pilot the new process. The second study will be a

full based pilot program during which time the new approach will be tested in nine plants. These represent a wide variety of plants with representation from each region. PWR and BWR plants will be included. The NRC has coordinated with industry to identify these plants. During the pilot study these plants will use the risk-informed oversight program in lieu of current processes. Draft inspection procedures and performance indicators will be developed prior to beginning the pilot. The six month pilot program will be measured against previously established criteria. We expect full implementation will begin in 2000 if the success criteria are met. The pilot project will also provide an opportunity to develop on the job training in the process for both the agency and the utility. We expect the pilot projects to begin in June 1999 and end by November 1999. The results of the pilot project and the lessons learned will be made available to both internal and external stakeholders in 1999 on the project WEB page. Those plants which will participate in the pilot project are:

Hope Creek -- Region I
Salem 1 and 2 -- Region I
FitzPatrick -- Region I
Shearon Harris -- Region II
Sequoyah 1 and 2 -- Region II
Prairie Island 1 and 2 -- Region III
Quad Cities 1 and 2 -- Region III
Ft. Calhoun -- Region IV
Cooper -- Region IV

What support is the NRC receiving from within the agency, from industry, from the public?

The Transition Task Force has and will continue to involve a wide variety of agency participants including representatives from NRR, RES, HR, OE, and all four regional offices. Actually, the agency, through its Transition Task Force, is working closely with the Nuclear Energy Institute, INPO, the Union of Concerned Scientists, other public interest groups and members of other governmental agencies.. There is general agreement on the overall conceptual approach of establishing cornerstones, establishing Performance Indicators, using a threshold matrix and conducting pilot projects. The Transition Task Force has been and will continue to hold announced public meetings to fully and openly discuss issues of common concern. In addition, our key executives in NRR and the Regions will continue to speak at industry and public conferences in order to inform as many as possible of our progress and to solicit their input so that our program can be optimized. 5/10/99

Won't this new approach require change in regulations, which may take many years to accomplish?

The new program may require some change in NRC regulations. This will take some time to bring about and approve. However, NRC will continue to assure that licensees comply with current rules and regulations. The new Oversight Program provides for licensees to be measured against objective performance indicators, maintaining operation within specific thresholds of acceptable risk according to the four established bands or categories identified as Green, White, Yellow and Red. When the licensee is found to

operate in a new performance band, the NRC will take appropriate action according to current regulatory procedures. 5/10/99

Characteristically, NRC inspectors have uncovered many plant problems, identifying potential problems. Will they now have to discontinue this activity?

Certainly not. NRC inspectors have the duty to not only conduct routine inspections, but to identify safety related issues and bring these to the forefront. The new program will provide inspectors with many new risk-informed tools which should provide an opportunity for inspectors to use their good judgement, but in terms of identifying specific safety issues based upon risk-informed processes. 5/7/99

Does this new program mean that inspectors will be merely monitoring the licensee against the cornerstones and thresholds and not conduct actual inspections?

Inspectors will continue to conduct inspections within each plant. Inspectors will conduct both Baseline Inspections as well as diagnostic and other special inspections on an as needed basis. Inspectors will be expected to be knowledgeable of plant activities and conditions. The data provided by each plant related to performance indicators will be monitored by the NRC and inspectors will utilize this data as part of their inspection program. The job of the resident and senior resident inspector is at the heart of the NRC safety program. Inspectors will continue to be the front line NRC representative with each plant. 5/7/99

Just what is this Transition Task Force and who is on it?

The Transition Task Force consists of approximately 40 NRC employees -- managers, inspectors, technical and administrative staff members. The Transition Task Force has been given the mission of developing the new procedures for risk-informed oversight and inspection of plants based upon the recommendations and conceptual model outlined in SECY-99-007 dated January 8, 1999. These recommendations for improving the regulatory oversight process were requested in SECY-98-045 dated June 30, 1998. As an interdisciplinary task force the TTF brings views and expertise from various parts of NRC, including the regions and HQ offices, to one central coordinating group. The Transition Task Force is administratively connected with NRR as a special project group housed in the Division of Inspection Program Management. The NRR Office Director is directly involved in the daily activities of the Transition Task Force and has given his full support of its activities. The Transition Task Force also coordinates with the EDO and Commission level gaining their insight into the process each step of the way. The Transition Task Force will develop new procedures for inspecting plants based upon performance indicators, cornerstones, and thresholds as well as the results of the feasibility study conducted in February 1999 and the pilot project phase which will include nine plants. The Transition Task Force will also, develop initial training activities for those inspectors involved with implementation of the new process. Again, the Transition Task Force consists of *agency personnel* as the new program will have to be implemented by *agency personnel*. This way we can gain the best from those who have front line experience. The Transition Task Force is being led by Alan Madison, Task Force Leader, in NRR.

What is the schedule of major events related to implementation of the oversight program?

Schedule of major activities in the oversight program

1999

- March Proposed Commission decision on program
- June Six month long pilot program at nine reactor sites
- October Workshop to describe implementation of new program
- November Completion of pilot program

2000

April

2001

- April First annual plant performance review of all plants under new process
- June Complete evaluation of effectiveness of new process

How does the NRC plan to monitor the effectiveness of the new inspection and oversight process following implementation?

The overall program development plan includes processes to monitor program effectiveness and efficiency. Part of the annual assessment process will include an assessment of program implementation effectiveness. Details of this process are currently under development by PIPB in coordination with the Transition Task Force.
(6/22/99)

In the new inspection and oversight process we rely heavily on the licensee's corrective action program to be effective. What measures will NRC have available if a licensee's corrective action program is not effective?

A basic premise of the revised oversight program is that an ineffective Corrective Action Program would result in inspection findings of significance or performance indicators outside of the licensee response band. We believe the new emphasis on problem identification and resolution in the baseline inspection program will focus inspectors toward constantly reviewing the effectiveness of a licensee's corrective action program. The annual assessment of a licensee's problem identification and resolution process also provides the NRC with the opportunity to look for potential adverse trends and patterns, and to provide this feedback to the licensee. The Action Matrix associated with the

revised reactor oversight process provides guidance on what actions the NRC will consider if performance thresholds are crossed. Therefore, the program encourages an effective corrective action program. (6/22/99)

Questions concerning cornerstones?

The new oversight program is anchored in the NRC's mission to ensure public health and safety in the operation of nuclear power plants. The objective is to monitor performance in three strategic areas

Reactor Safety
Radiation Safety
Security

Within these three areas are the basic cornerstones of the new program. The following chart depicts these cornerstones and how they are co-ordinated with the overall mission of the agency.

It seems that the cross-cutting issues of *human performance* and *safety culture* will be factored into the new program; however past experience has shown that root cause analysis in this area is an early indicator of problems in safety performance at reactor facilities. Will this be dealt with?

Both of these areas are measured indirectly by performance indicators and through inspections. Similar to corrective action programs, the revised oversight process was developed on the principle that ineffectiveness in these areas will surface as problems within the cornerstones. Poor performance in cross-cutting issues is expected to result in performance indicators degrading, warranting increased regulatory interaction. Subsequent follow-up inspection will consider the root cause of these performance issues. The Office of Research is investigating other means or new performance indicators to measure cross-cutting issues. (6/22/99)

Questions concerning Performance Indicators (PIs)

What are Performance Indicators?

Nuclear plant performance will be measured by a combination of objective performance indicators and by the inspection program. These activities will be refocused on those plant activities which have the greatest impact on safety and overall risk.

Performance Indicators are mathematical representation of various aspects of reactor plant performance based on objective data that have been shown to accurately measure performance or provide a positive correlation to performance in specific areas. The data which make up the performance indicators will be generated by the utilities and submitted to the NRC on a regular basis. The NRC will use its inspection program to both validate the accuracy of the PI information submitted and to assess performance that is not

measured by the performance indicators. Initially there will be 19 performance indicators. The following chart lists the performance indicators.

How will the performance indicators compare with INPO's WANO indicator reporting requirements?

Two of the indicators are similar. Scrams per 7000 critical hours is the same as WANO's indicator but it includes manual as well as automatic scrams. The Safety System U (SSU) use the same data as the WANO SSPIs but may also include additional systems using data collected by INPO. Indicators for the emergency preparedness cornerstone and the cornerstones in the radiation and safeguards strategic performance areas are not currently being collected or reported for WANO. 4/27/99

The PIs seem to be focused primarily on ECCS systems. What about reactivity control systems?

Reactivity controls systems are covered by risk informed baseline inspections. 4/27/99

How will reporting of PI's be required by regulation? If not, won't this impact the NRC's ability to implement the revised oversight process?

Reporting of PI's will be a voluntary program based on a document developed jointly by the NRC and NEI. This document will be endorsed by an NRC NUREG. Failure to report PI data will necessitate additional inspection efforts to implement the revised oversight process.

Why are there no shutdown PIs?

Shutdown PIs have not been sufficiently developed to permit their implementation along with other PIs. This area is recognized as being significant and will continue to be developed for future implementation. In the interim, the risk-informed baseline inspection will provide insights into licensee performance while shutdown. 4/27/99

Will new Performance Indicators be added in the future?

Yes. We are planning to add an unreliability indicator in the future, as well as an indicator associated with initiating events during plant shutdowns. Risk-based indicators for mitigating systems are under development. These are intended to replace the current mitigating system indicators in 2001. The need for changes will be evaluated after the pilot program and the lessons learned from it are analyzed. (6/22/99)

How much time does the licensee have to report Performance Indicator data to NRC? How long will it be until the regions receive the data?

In an effort to make Performance Indicator data available to a wide audience, the data is available to the public on the [Revised Reactor Oversight Process web site](#). Licensees have 14 days from the end of the month/quarter to report the PI data to NRC. During the pilot program, headquarters should turn this data around in one week and have it posted

on the WEB page and made available to each region. The exception may be OCDM data which requires 2 to 3 weeks of lab work to obtain results. When these results are submitted they will be added to the WEB data base.

As the pilot program progresses and we receive more experience with the new processes these times may be adjusted, however it is important that data be quickly available to all those who need it. (7/8/99)

Questions concerning the Baseline Inspection Program

What is the baseline inspection program?

Licensees that are in the licensee-response band will receive the baseline inspection. If the NRC conducts an inspection as follow up to an allegation that is in an area outside the baseline inspection, won't the licensee know that the inspection is related to an allegation?

It is highly possible that the licensee will conclude that an inspection covering an area outside the baseline inspection procedures is related to an allegation. This concern also applies to our current processes. The staff will inform allegers of this possibility. 4/27/99

How will the Inspection Manual Chapter 0350 process be integrated with the current oversight regime?

IMC 0350, "Staff Guidelines for Restart Approval," is being reviewed as part of an overall effort to develop the inspection program beyond the baseline inspection program. IMC 0350 (or its substitute) will be implemented at the discretion of NRR and regional management, consistent with the Action Matrix, for plants which enter into an extended shutdown. (6/22/99)

How will positive inspection findings be handled?

The NRC does not have objective criteria for evaluating positive findings. Therefore, the assessment process does not explicitly incorporate positive findings and they will not be documented in baseline inspection reports. However, positive aspects of licensee operations will be reflected in those items for which the Significance Determination Process credits mitigation capabilities. These positive aspects will be recorded in inspection reports as assumptions used in characterizing inspection findings. In addition, positive licensee performance is reflected in the new reactor oversight process performance indicators (i.e., green indicators are generally signs of acceptable performance results.) (6/22/99)

In reference to design inspections and generic safety issues, will we inspect initial design through the inspection program?

Yes. A baseline inspection area (Safety System Design and Performance Capability) addresses design review specifically. For additional guidance see IMC 2515. (6/22/99)

How will inspection procedures be shared with the public?

The draft inspection procedures developed by the NRC have been made available at various public meetings and are available from the [NRC Public Document Room](#). In addition, information about the program will be available to the public on the [Revised Reactor Oversight Process site](#).

Questions concerning the assessment process

How will licensee self-assessments be considered in the new process? Will licensee inspection in lieu of NRC inspection (similar to IP 40501) be permitted under the new process?

The proposed process will continue to encourage licensees to conduct self-assessments as a means to identify problems. The NRC will conduct the risk-informed baseline inspection program (RBIP) to provide complementary inspection in risk important areas not covered by the performance indicators; supplemental inspections to address performance indicator limitations, and verification of performance indicator accuracy. The risk-informed inspection represents the minimum level of inspection to be conducted at all power plants. We believe that this level of inspection provides the regulatory independence necessary to enable the public to have confidence that overall regulatory process is credible. Therefore, we would not allow licensees to conduct inspection of the risk-informed baseline inspection in lieu of NRC inspection. However, we do believe that may be appropriate for the NRC to allow licensees to conduct selected inspections beyond the RBIP. Although the process has not yet been developed, it would likely be similar to the requirements of IMC 40501. (NRC would review the licensee's plan, sample the assessment in process, and sample results to verify that appropriate actions to address the findings have been initiated.) 4/27/99

Will each plant receive a public meeting?

Yes. The NRC will conduct a public meeting in the vicinity of each plant to discuss the assessment results and planned inspections. This meeting will be conducted annually following the annual assessment Commission meeting. 4/27/99

The current assessment process can be influenced by the number of inspection hours devoted to each plant (e.g., increased inspection will likely result in identification and documentation of an increased number of low significance issues). How will the proposed process address this issue?

The proposed process will focus regulatory actions on issues that have a potential to impact the cornerstones (i.e., risk significant issues). Findings of little safety significance, which are most influenced by the number of inspection hours devoted, will not result in increased regulatory action. Rather, they will be placed in licensee corrective action systems and addressed on a schedule commensurate with their safety importance. We believe this approach will make the process much less sensitive to the level of inspection devoted to an individual plant. Notwithstanding the amount of inspection conducted, as appropriate findings that have an ability to impact the cornerstone will result in increased regulatory actions. 4/27/99

Will plants that are in an extended shutdown to address significant performance concerns (i.e., under the Inspection Manual Chapter (IMC) 0350 process) be phased back into the assessment process?

As is the case with our existing assessment processes, plants that are in an extended shutdown would be governed by IMC 0350 process. This is necessary because of the impact of shutdown on the PIs and the need to customize inspection and other actions to the specific issues that exist for each plant. The inspections are largely focused on determining whether licensee restart approval should be granted. We plan to develop procedural guidance that will provide for returning plants to the routine oversight process once restart has occurred. 4/27/99

What will the end-of-cycle assessment letter look like? Will it provide an overall assessment of plant performance (e.g., ". . .the plant is in the green band")?

The format of the end-of-cycle assessment letter has not yet been developed. Guidance regarding the end-of-cycle letter will be developed as part of development of overall guidance on implementation of the assessment process and will be tested during the pilot process. We currently envision an assessment report that succinctly conveys the PI results and inspection area results by Cornerstone with a brief analysis of those areas where Cornerstones have been crossed. In addition, this letter would forward a list of the inspection issues identified and the inspections planned by the NRC for the next six months. Because of the importance of this letter as a communication vehicle, we plan to work closely with stakeholders in developing the proposed format and content. 4/27/99

If we begin collecting data in January 2000, why will the first assessment not occur until April 2000?

We plan to annual assessments in the April/May time frame each year to allow actions with have resource implications to be factored into resource planning for the upcoming fiscal year. The first annual cycle will be extended by one quarter in order to align the process with this schedule. 4/27/99

Will the action labels on the action matrix create new categories (i.e., will they be used as pseudo labels for Watch List, etc.?)

As discussed in SECY-99-007, it is our intention to eliminate performance labels such as "Watch List." The roman numerals for each of the results columns in the Action Matrix could potentially be used to label plants and therefore will be deleted. 4/27/99

How many plants do we expect to see in the "green band" based on implementation of the current concept and thresholds?

The NRC benchmarked the proposed PIs and thresholds against the performance results for 17 plants. The results indicate that approximately 50 percent of the plants would have been in the green band *based on PIs alone*. 4/27/99

Are the cornerstones weighted?

NO

How will findings be handled that result from follow up of allegations?

Findings that result from follow up of allegations will be handled under the same process as any other finding. 4/27/99

The action matrix refers to licensee actions. How will the NRC get licensees to take action?

Licensees are required by regulation to take action to correct problem.

Questions concerning the Significance Determination Process (SDP)

What are the staff's efforts in characterizing "green" findings?

Inspection findings assigned a "green" rating would be noted in an inspection report and referred to the licensee for corrective action. During subsequent inspections, including the annual problem identification and resolution inspection, these items may be included as part of a sample to determine the effectiveness of the licensee's corrective action program. It should be noted that the significance determination process does encourage the grouping of multiple concurrent findings when assessing safety significance. Consequently multiple "green" findings may result in more significant risk determination when related issues are evaluated together. (6/22/99)

Questions concerning the pilot plant program

What is the pilot plant program?

Like any new process the test of time will tell how well it works. We expect change and modification as we continue the process and learn new lessons from our activities. Before the January 2000 formal implementation the NRC will conduct, in conjunction with the industry, a pilot plant program with nine plants. The pilot plants represent a wide variety of facilities with representation from each region. PWR and BWR plants will be included. The NRC has coordinated with industry to identify these plants. During the pilot study these plants will use the risk-informed oversight program in lieu of current processes. Draft inspection procedures and performance indicators will be developed prior to beginning the pilot. The six month pilot program will be measured against previously established criteria. We expect full implementation will begin in 2000 if the success criteria are met. The pilot project will also provide an opportunity to develop on the job training in the process for both the agency and the utility. We expect the pilot projects to begin in June 1999 and end by November 1999. The results of the pilot project and the lessons learned will be made available to both internal and external stakeholders in 1999 on the project WEB page. Those plants which will participate in the pilot project are:

Hope Creek -- Region I
Salem 1 and 2 -- Region I

FitzPatrick -- Region I
Shearon Harris -- Region II
Sequoyah 1 and 2 -- Region II
Prairie Island 1 and 2 -- Region III
Quad Cities 1 and 2 -- Region III
Ft. Calhoun -- Region IV
Cooper -- Region IV

How were the pilot plants selected?

The nine plants selected represent a cross-section of design and licensee performance across the industry. The NRC established selection criteria for potential candidate plants, discussed these with NRC Regional management, and with NEI and finally with plant management. Before publically announcing which sites were participating the NRC contacted each of the appropriate State organizations to notify them of the site's participation.

What was the NRC criteria for selecting the pilot plants?

The NRC established the following criteria to identify pilot sites.

- Licensees were chosen that had either volunteered to participate or that had participated in the NEI task group working on improving the regulatory oversight processes. A number of different licensees were chosen to participate in order to maximize industry exposure to the 4 new processes.
- Plants were chosen to represent a broad spectrum of performance levels. Plants which were in extended shutdowns because of performance issues were not considered.
- A mix of pressurized-water reactors (PWR) and boiling-water reactors (BWR) plants were chosen.
- A mix of vendors and plant ages were chosen.
- To the extent possible two plants with different performance levels within each region were chosen. In Region I three plants were chosen because two plants were in close proximity of each other and managed by the same utility.
- NRC Regional office concerns, such as experience of NRC staff associated with pilot plants and internal staffing issues were considered.
- Licensee concerns, such as their involvement with other significant NRC activities (license renewal, steam generator replacement, etc.) were considered.

How will the public be informed of the program?

The NRC will hold a public meeting in the vicinity of each pilot plant during the months of June and July 1999. At these meetings NRC management representatives will describe the new program and the pilot program. Members of the public and industry will have an opportunity to ask questions and participate in discussion of the pilot program at these meetings. The location and time of these Public Meetings will be announced in the Federal Register as well as in the local media.

Questions concerning the allegation program?

How will allegations be handled under the new assessment/inspection process?

Allegations will continue to be handled as they are now. The NRC staff will determine whether to conduct an inspection or refer the allegation to the licensee for resolution based on guidance in Management Directive 8.8, "Management of Allegations." If the allegation will be resolved through inspection, inspections will continue to be conducted on a schedule commensurate with the safety or regulatory significance of the concern. The agency goal for resolving technical allegations will remain 180 days, on average, even though the average time to complete technical allegations in FY98 was 117 days. Leaving the goal at 180 days allows the staff to effectively use inspection resources and avoid changing the inspection schedule unless safety or regulatory significance warrants changing the schedule. 4/27/99

Questions concerning the enforcement program

How will NRC's Enforcement Actions be affected?

Any changes in the NRC's enforcement program will be developed after the revised inspection and oversight program is approved. Until that time, the NRC will continue to issue Notices of Violation when significant violations are identified during inspections. The Notice of Violation requires the utility to take corrective action to prevent a recurrence of the violation and may include a fine.

The new enforcement approach is a shift from the past implementation of the NRC enforcement function. However, it will continue to maintain a compliance focus by use of NCV's, NOV's, and escalated action for a small group of issues. This will be done as the agency moves to a more risk-informed and performance based regulatory process. The agency's regulatory response will continue to escalate based on the safety significance of issues and overall performance of a licensee. There will continue to be increased regulatory scrutiny and deterrence for poor performance. This should result in maintaining a satisfactory level of performance as licensee's strive to avoid regulatory costs associated with increased inspection and attention by NRC. Because the assessment process will be performing many of the functions that the enforcement process was providing in the past, there is a reduced need for the process of varying severity levels and the imposition of civil penalties. The consistent regulatory message this process allows should also be more efficient and effective. Although, the perception of a total abandonment of civil penalties may initially result in a negative public perception, the overall approach to assessment, inspection and enforcement should, in the long term, provide assurance to the public that the NRC is fulfilling its mission of protecting public

health and safety. Finally, this approach should result in allowing licensee's to prioritize and correct non-significant safety violations of our requirements without regulatory involvement. This should promote appropriate correction of deficiencies in a less adversarial manner.

Will the new enforcement policy complement the performance assessment process rather than layering on to enforcement as a separate and redundant assessment process?

The new enforcement policy will complement the assessment process. The new enforcement policy should actually reduce the amount of regulatory burden required by both NRC and licensees. The new enforcement policy will be published in the Federal Register for public comment. [SECY 99-007A](#) memo addresses the new enforcement policy for the pilot plants. Many of the enforcement actions in the current policy will be accomplished by the new program as depicted in the *Action Matrix*. ([Include HTML to Action Matrix](#)) (6/22/99)

If you have additional questions, please contact [August Spector](#).

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