ACNW-0120

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MINUTES OF THE 99TH ACNW MEETING
MARCH 23—25, 1998

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Issued: 5/19/98

By B. John Garrick
5/31/98

PROPOSED MINUTES OF THE 99TH MEETING OF THE ADVISORY COMMITTEE ON NUCLEAR WASTE MARCH 23—25, 1998 ROCKVILLE, MARYLAND

The Advisory Committee on Nuclear Waste (ACNW) held its 99th meeting March 23—25, 1998, at Two White Flint North, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland. The ACNW met to discuss and take appropriate action on the items listed in the attached agenda. The entire meeting was open to public attendance.

A transcript of selected portions of the meeting is available in the U.S. Nuclear Regulatory Commission (NRC) Public Document Room at the Gelman Building, 2120 L Street, NW., Washington, DC. Copies of the transcript are available for purchase from Ann Riley & Associates, Ltd., 1250 I Street, NW., Suite 300, Washington, DC 20005. Transcripts are also available for downloading or reviewing on the Internet at http://www.nrc.gov/ACRSACNW.

Dr. B. John Garrick, ACNW Chairman, convened the meeting at 8:33 a.m. and explained the purpose of this session. ACNW members Drs. Charles Fairhurst, Raymond G. Wymer, and George M. Hornberger were also present. For a list of other attendees, see Appendix III.

I. **Chairman's Report** (Open)

[Richard K. Major was the Designated Federal Official for this part of the meeting.]

Dr. Garrick noted a number of items that he believed to be of interest, including the following:

(1) Baltimore Gas & Electric Company (BG&E) has announced that it will seek renewal of the operating license for the two units at the Calvert Cliffs nuclear power plant. One license is due to expire in 2014, and the other license will expire 2 years later. BG&E

plans to replace all four steam generators at the station. Stiff opposition is expected from anti-nuclear groups.

(2) Supervisors of Athens Township in Meadville, PA, assured a crowd of at least 100 people on March 17, 1998, that they will oppose the proposed location of a low-level waste (LLW) disposal site in their jurisdiction.

(3) The State of Tennessee has rejected the Department of Energy's (DOE's) plans to burn radioactive waste from 14 sites around the Nation this year at an incinerator at Oak Ridge. DOE's Oak Ridge manager is scheduled to meet with the Governor's environmental advisors in Nashville to discuss the "more adequate clean-up funding" to help overcome State objections.

(4) Utah lawmakers have wrapped up action on legislation aimed at blocking a proposed spent fuel storage installation that would be built on the Skull Valley Band of the Goshute Indian Reservation. The law would require the license applicant, Private Fuel Storage, to pay a $5 million licensing fee and post a $2 billion cash bond before any spent fuel enters the State. Separately, it is reported that NRC officials believe the review of Private Fuel Storage's license application will take 2 to 4 years.

II. Meeting With NRC Commissioner Edward McGaffigan, Jr. (Open)

[Ms. Lynn G. Deering was the Designated Federal Official for this part of the meeting.]

Commissioner Edward McGaffigan, Jr., discussed issues in the area of high-level waste (HLW), including 10 CFR Part 60 and the Environmental Protection Agency (EPA) standard; decommissioning; transportation of waste; transmutation of waste; LLW, including criticality issues at the Envirocare and Barnwell sites; Ward Valley; waste classification issues for the proposed Trojan reactor vessel shipment; the LLW Branch Technical Position; and application of risk-informed, performance-based (RIPB) regulation to waste issues.

Commissioner McGaffigan expressed concern that the EPA standard, depending on what it will be, could derail the viability assessment (VA) process. For example, the 4-mrem ground water protection standard could have a serious impact on the overall program, including NRC's 10 CFR Part 60 rulemaking. On the other hand, the bill in Congress for HLW storage and an all-pathways standard could also affect the direction of NRC's HLW rule. Commissioner McGaffigan expressed his view that he does not consider use of the 4-mrem limit for dose contribution in the ground water pathway a workable concept, outside application to the Waste Isolation Pilot Plant site.

In the area of decommissioning, the Commissioner asked the ACNW to review the guidance documents with an eye toward "ultraconservatism" and indicated that he wanted to avoid use of conservative assumptions that could undermine the annual 25-mrem standard, in conjunction with the application of the "as low as reasonably achievable" (ALARA) principle.

He expressed concern about the problem of dual regulation with EPA, that is, under the present regulatory environment, the finality of NRC's decisions regarding license termination and cleanup could be questioned by EPA. For example, EPA could require application of the drinking water maximum concentration limit to ground water at these sites after NRC had based license termination decisions on the "all-pathways" standard in NRC's decommissioning

rule. NRC has sought a change in legislation through the superfund reauthorization bill granting NRC and Agreement States final authority in license termination decisions.

The Commissioner asked the ACNW to consider the issue of transportation of HLW, including what NRC needs to do to update transportation issue and whether the actual risks have been adequately assessed and addressed in NRC regulations. Dr. Garrick indicated that it is a challenge to assess the tradeoffs between transporting waste versus treatment and processing wastes in place, and although most studies and tests indicate transportation risks are low, the public perception of the risks is high. Dr. Wymer noted that it is important to differentiate between the types of waste containers used in assessing risk.

Commissioner McGaffigan indicated that many of the issues in LLW are underbudgeted currently and questioned whether the NRC needs to consider making LLW a higher priority. He indicated that he has changed his mind over time on the importance NRC should assign to LLW. He suggested that he would like to use the ACNW to perform specific case work in LLW similar to the way in which the Commission uses the Advisory Committee on Reactor Safeguards. The ACNW referred the Commissioner to its previous letter on the "Elements of an Adequate Low-Level Radioactive Waste Program" and indicated that it would like to become involved in more case work, if resources will allow.

Commissioner McGaffigan indicated that LLW, HLW, and decommissioning are intimately related and that the NRC needs to take an integrated approach to address these programs. He suggested that the ACNW could help examine the tradeoffs and relationships between issues across programs.

Finally, Commissioner McGaffigan indicated that the NRC has committed to apply the RIPB concept to the waste program, but the ACNW could offer ideas on when it is appropriate to apply the NRC's RIPB policy statement, as well as examples of how it could be applied to waste. Dr. Garrick expressed his belief that the waste field has many opportunities to use the RIPB concept and that the NRC has the responsibility to push industry toward this end.

III. Issues on Risk-Informed, Performance-Based Regulation (Open)

[Dr. Andrew C. Campbell was the Designated Federal Official for this part of the meeting.]

Dr. Carl Paperiello, Director, Office of Nuclear Material Safety and Safeguards (NMSS), gave an overview of RIPB regulation with respect to nuclear materials regulated by NMSS. He said that risk assessment and risk management have always been at the heart of the regulatory laws, but risk has not always been treated in a systematic fashion. He stated that NMSS is trying to enunciate and quantify risk in its activities. A large number of activities are regulated by NMSS—everything from radioactive gauges to the HLW repository. He noted that risk assessment and probabilistic risk assessment (PRA) for reactors have become synonymous but that there are many other approaches for risk assessment. For many NMSS- regulated activities, there is a lack of multiple barriers, the failures with which they deal are dominated by human error, and there is little or no data. For example, data on laboratory spills are not available, and the cost of trying to collect this kind of information is high. NMSS uses a bounding approach for dealing with risk.

Mr. Paperiello said that his office is looking for suitable risk approaches for NMSS, including examining hazard evaluation in chemical industry guidelines and in Savannah River Site guidelines. The goal is to identify risk assessment techniques that can be applied to different NMSS problems without large resource expenditures. One of the issues is the size of the population at risk and how it is defined. He noted that the NRC safety goal policy specifies a 10^{-4} lifetime risk, which corresponds to a 200-mrem dose. He added that the risk may be higher in NMSS-regulated activities than in activities regulated by the Office Nuclear Reactor Regula-

tion. He observed that the three requirements in 10 CFR Part 20 are examples of a performance-based regulation, whereas 10 CFR Part 34 is very prescriptive. He added that making some of these practices performance based would not work, and that there is no outcry to change the regulations among licensees or the Agreement States. He noted the difficulty of determining what the consequences are and how to measure them.

Committee members noted that risk assessment is a thought process. In general, it is associated with reactor PRA and the very complex approaches in that methodology, but many other industries have come to view risk assessment in a different light than for PRA. To develop performance-based approaches, individuals must be able to see what contributes to performance in the calculations. Dr. Paperiello said that if NMSS had the information required for changing regulations it would, but at this time it does not have the necessary data. He gave an example of the problems he saw in trying to obtain this type of information. He cited prescriptive regulation of the disposal of household chemicals as an example that illustrates that the performance-based approach is the best approach.

Mr. Seth Coplan, Division of Waste Management (DWM), NMSS, discussed licensing and regulation within NMSS and the application of RIPB regulation to a broad range of issues. He said that the NMSS regulatory program covers 40 different activities and 20,000 licenses, most of which are issued by Agreement States. He discussed the Atomic Energy Act provisions on Agreement States and added that 30 Agreement States would be affected by any change in NRC approaches. He showed a list of 40 nuclear byproduct materials systems and added that it is very difficult to draw general conclusions about these different activities. He also stated that a significant number of activities are not on the list (e.g., LLW disposal, transport, etc.).

Mr. Coplan then discussed the characteristics of the large variety of activities and systems regulated by NMSS, ranging from small devices to large fuel cycle facilities. He noted that the hazards vary greatly and that human error tends to be the most important contributor to problems. He also said that there are limited data available, that licensee communities vary in

terms of technical sophistication, and that there are fundamental differences in regulating these licensees.

He discussed the different regulatory approaches used by NMSS, ranging from the flexible (e.g., 10 CFR Parts 20, 60, and 61) to the very prescriptive (e.g., Part 34). He added that performance-based regulation can be very resource intensive and technically demanding. He noted that NMSS would need to be able to deal with whatever a licensee might choose to do to meet a performance objective. He said that there is a lack of technical sophistication for functioning in that type of regime. He noted the need for flexibility for a designer of a "first of its kind" facility.

Mr. Coplan said that there is an explicit consideration of risk in the HLW regulations. For example, the probabilistic release rate standard by EPA is cited in 10 CFR Part 60. He added that the dose limit is "arguably" a risk-based approach and said that since the 1970s, the staff has been developing performance-assessment methodologies, which are probabilistic approaches. He also cited a transportation study and a medical technology study as examples of risk-based approaches used in NMSS.

Mr. Coplan said that PRA is not the method of choice in NMSS. He compared PRA for reactors with performance assessment (PA) for waste applications. He discussed other methods of determining risks [e.g., PA for waste and decommissioning and integrated safety assessment (ISA) for fuel cycle facilities]. He said that there has been an increase in the use of system analysis and risk analysis in NMSS (e.g., revisions to 10 CFR Part 70 requiring a fuel cycle facility to perform an ISA). He said that the level of quantification may be variable. In some cases, actuarial methods may be appropriate. He added that simple methods may be used for simple systems. For example, one could break a system into individual parts and construct a failure rate for each component to calculate an overall risk of failure.

Mr. Coplan said that it is problematic to develop safety goals for NMSS. He said that the Commission's reactor safety goal has concepts in it that are meaningless to NMSS activities.

He added that the range of uses and costs varies widely and the benefits of risk reduction also vary. He said that the perception of risk is a big driver in NMSS activities. For example, he cited an incident in New Jersey in which a house was contaminated with tritium from a broken exit sign. He noted that it cost $100,000 to clean it up to avoid a dose of about 60 mrem, which was way below the ALARA limit of $2000/person rem. He added that legislation drives much of the regulatory framework and that the laws often reflect public perceptions. In conclusion, he reiterated the differences between nuclear materials activities and reactor operation and noted that a mix of approaches is used. He said that NMSS would have difficulties in carrying out its activities if it is unduly constrained. NMSS is, he said, pursuing opportunities to increase the use of risk approaches but needed flexibility to implement them.

In a question-and-answer session, one ACNW member noted that the essence of the presentation was a need for common sense in the system. Mr. Coplan agreed and noted the need for flexibility. Another ACNW member asked about reducing costs and noted the example of "prescriptive" HLW regulations and the problems with not allowing flexibility. Another ACNW member asked about the limited resources for performing risk assessment in NMSS. Dr. Paperiello said that staff resources are not very fungible and that the staff is looking for approaches that can be readily applied to different activities. Another member said that from a strategic standpoint, the emphasis should be on an acceptable approach to risk assessment for different activities (not just reactors), which, he added, the rest of the world is doing, rather than appearing to reject risk analysis. He added that he believes NMSS's commitment for the future applications of risk-informed approaches is weak and that it needs to specify the level of commitment. Mr. Coplan said that risk assessment for some facilities would be a fairly large undertaking analogous to those performed for reactors, but many of the similarities start to fall apart upon closer examination. He said that the licensees are extremely competitive, they do not share information and approaches, much of the information is proprietary, and the risk is not very high. In general, the licensees propose semi-quantitative approaches that they believe go a long way in characterizing the risks.

One ACNW member noted that the need to perform a risk analysis is inversely proportional to the data. The issue is how to develop a perspective for performing risk analysis. Mr. Coplan said that risk assessment methodologies make sense for HLW and LLW but do not make sense in a number of areas in which the gain is not worth the effort. An ACNW member discussed the history of risk analysis in the reactor area. He noted the need to develop a risk thought process—a framework for RIPB regulation thinking—that would take into account the variability in the risks. He thought that this step would allow NMSS to move in the direction of a risk-informed approach.

Mr. Coplan then discussed the Commission's request for NMSS to develop a framework for applying risk-informed approaches in the office. Mr. Serig, Division of Industrial and Medical Nuclear Safety, NMSS , discussed the application of Direction-Setting Issue 12 to the 40 systems regulated by NMSS. He said that NMSS was trying to sort out the relative risk of the different regulated activities. He also said that NMSS was attempting to rank these activities in terms of risk to determine whether any changes in regulations need to be made on the basis of risk. He discussed the hazard barrier analysis approach, which will allow grouping of activities according to risk.

IV. Decommissioning Guidance (Open)

[Mr. Howard J. Larson was the Designated Federal Official for this part of the meeting.]

Dr. Wymer introduced the topic by noting that it is one that has been designated a high priority for the Committee and is one in which the Committee has had a long-standing interest. Ms. Cheryl Trottier, Branch Chief, RES, provided a brief introduction and background on the guidance. Accompanying Ms. Trottier was Ms. Christine Daily and Dr. Stephen McGuire, RES. In addition, Mr. Ralph Andersen, Nuclear Energy Institute (NEI), presented the observations of his electric industry trade association. Mr. David Fauver, a representative from NMSS, was in attendance and responded to the Committee's questions pertaining to the responsibilities of NMSS.

Ms. Trottier stated that the final rule on "Radiological Criteria for Decommissioning," which was approved by the Commission on May 21, 1997, became effective 30 days after publication. However, licensees were given 1 year before implementation of the rule is required to allow time for publication of the guidance. She indicated that the rule adopted a 25-mrem, "all-pathways" standard for unrestricted release (with no specific ground water requirement).

She noted that the regulatory guide contained no table of cleanup values and that the corresponding model established "screening values" with inputs that are based upon conservative values from across the United States.

She then discussed each of the four modules comprising the proposed regulatory guide:

1. Use of the new DandD dose modeling code—The code only addresses structures and soils; NUREG-1549 provides a decision methodology for screening.

2. The final site radiation survey—Based on NUREGs 1505, 1506, 1507, and the recently developed and accepted multi-agency survey manual [MARSSIM], where appropriate.

3. ALARA analyses—Provide guidance on how to demonstrate compliance with ALARA requirements.

4. Release under restricted conditions—Addresses use of institutional controls, public participation aspects, and financial assurance requirements.

The supporting documentation for the regulatory guide is contained in the following documents:

1. NUREG/CR-5512, "Residual Radioactive Contamination From Decommissioning" (Volume 1, and Draft Volumes 2 and 3).

2. Draft NUREG-1549, "Using Decision Methods for Dose Assessment to Comply With Radiological Criteria for License Termination."

3. NUREG-1505, "A Nonparametric Statistical Methodology for the Design and Analysis of Final Status Decommissioning Surveys."

4. NUREG-1506, "Measurement Methods for Radiological Surveys in Support of New Decommissioning Criteria."

5. NUREG-1507, "Minimum Detectable Concentrations With Typical Radiation Instruments for Various Contaminants and Field Conditions."

ACNW members expressed concerns about the degree of conservatism in the model, whether generic screening criteria would be accepted by the NRC licensing staff, whether sites that "pass" the screening values also "pass" the ALARA analysis requirement, and the efficacy of the 2-year comment period. In regard to this last item, the question was whether a 2-year period would be sufficient for some of the more complex decommissioning projects. Ms. Trottier noted that it was not considered an ALARA requirement to clean up soil concentrations resulting in dose levels of less than 25 mrem.

Ms. Daily next discussed NUREG-1549, stating that the decision methodology supports a range of options from simple screening to complex site-specific analysis. The screening approach, she explained, provided a known, well-defined starting point that was believed to be cost-effective, simple to use, and gave the NRC assurance that the sites using the defaults are in compliance with the final rule. Additional site-specific information should reduce uncertainty and generally result in a reduction of the estimated dose. She then discussed two models and their links: the residential and the building scenarios.

The Committee asked Ms. Daily about the following topics:

- The status of peer reviews of the DandD code and the relevant quality control practices applied.

- The determination of the distributions for the deterministic values used in the parameter analysis.

- The anticipated variability in screening values and screening levels.

- The possibility of releasing a site in error.

- The basis for the 1000-year timeframe;

- The importance of the radionuclide partitioning component; comparisons with RESRAD.

- Acceptance of data from licensees.

Dr. P. Davis, SANDIA contractor and one of the DandD code authors, replied to several of these questions. He discussed his perceptions of several problems with RESRAD and noted the expectation that although it was anticipated that about 20 to 25 percent of the sites would pass the initial screening, a small percentage of sites would require some form of restricted release.

Although the Committee had questions on the regulatory guide, it complimented the staff on the approach, noting that it was dose based, was consistent from site to site, and was a positive move in the direction of the agency's objective of attaining a risk-informed, performance-based regulatory infrastructure.

Dr. McGuire next discussed the use of the MARSSIM for the final survey, stating that one of the objectives of the MARSSIM was to standardize the final status survey plan by making it more routine. This step should lessen both the licensee preparation effort and the NRC's review. He

discussed each of the elements involved in the final survey, noting that there were still several issues to be resolved, such as how well the method would work in practice, whether the method would really work for radionuclides found in the background when the derived concentration guideline is less than the average background concentration, the need for a survey methodology for piping and equipment, and the need for a standard format and content (SF&C) document to assist licensees in the preparation of their submissions.

Next, he discussed the ALARA requirements, noting how the principle is to be applied to the rule. He stated that ALARA may be achieved by using "good practices," or intuition. However, if there was a question about whether a dose reduction using a remediation action is "reasonably achievable," the regulatory guide provides a quantitative method to make such a determination. The quantitative ALARA method weighs the benefits against the costs, using $2000/person-rem and appropriate discount factors to evaluate the future collective dose averted. The costs to be considered include the remediation action itself, transport and disposal of waste, worker accidents, traffic fatalities, and worker and public dose. He then discussed the formula for evaluating each potential remediation action.

The Committee asked several questions about the applicability of the ALARA principle to the decommissioning process and also asked about the values proposed for several of the inputs to the remediation formula.

Dr. McGuire next discussed the module addressing license termination under restricted conditions. He indicated that there were four principal considerations associated with such a license termination:

1. The need for legally enforceable institutional controls,
2. Financial assurance mechanisms,
3. Seeking public advice on institutional controls, and
4. Alternate criteria for license termination.

He discussed each of these considerations, noting that the overall comments received on the draft regulatory guides when they were originally sent out for comment were very favorable, with commenters generally wanting more details and examples. He stated that there is no NRC role after license termination, as at that point the site would revert to non-Federal jurisdiction.

The Committee asked Mr. D. Fauver, NMSS, several direct questions regarding the implementation of the rule and the regulatory guide by NMSS. Mr. Fauver stated that although NMSS did not have sufficient resources to review all aspects of the regulatory guide and models, NMSS is in the process of formulating a request for such resources. This step is being taken so that NMSS might prepare the necessary SF&C guide and standard review plan (SRP) in a timely manner for use by licensees. He discussed the proposed pilot program for use on "simple" sites and the intent to use the decommissioning of the Sequoyah Fuels facility as a model for complex sites. It is NMSS's intent to review, in detail, the proposed regulatory guides during the comment period and to closely monitor industry response and practices.

In general, NMSS concurs with the approach but believes there are some complex technical issues that must be resolved before the regulatory guides can be accepted for general use.

Mr. Andersen indicated that the principal point NEI wished to make was that the NRC should continue its efforts to avoid dual regulation. NEI believes that the prospect of dual regulation seems to go against the espoused thrust of the current Administration. He stated that the "NRC cost-benefit analysis demonstrates that EPA-preferred standards would be costly, with little or no safety benefit."

Dr. Wymer asked Mr. Andersen if his message was that the ACNW should tell the Commission that dual regulation should be avoided and that the process for implementation of the termination criteria should be well thought out. Mr. Andersen agreed. Dr. Garrick asked what NEI was doing with regard to dual regulation, to which Mr. Andersen replied that NEI was in direct communication with the Administrator of EPA, the NRC Chairman, relevant congressional staff,

and the trade association membership. NEI believes that the issue will only be resolved with finality through the legislative process.

NEI believes that the guidance appears to be relevant, practical, and useful but that additional training is needed on the use of the MARSSIM and the codes. The need to distinguish between screening and implementing guidance and to clearly emphasize that the ALARA analysis is prospective, not retrospective, was stressed. NEI also stated that the restricted-use module seems to have excessive multiple layers of requirements (a "belt and suspenders approach"). The NEI staff intends to conduct interim field tests of the rule and regulatory guides before the issuance of additional NRC regulatory guidance (SRP and SF&C documents).

At the conclusion of the presentations, Dr. Garrick thanked the presenters for their views and indicated that the Committee intended to prepare a letter on this topic. Among the various issues to be considered in such a report was the need for workshops and training on the use of the DandD code and the MARSSIM and the need for relatively prompt development by NMSS of the SRP and SF&C documents (in light of the August 1998 mandatory implementation of the rule). The Committee also indicated its intent to follow closely the development of the regulatory guides and the effect of comments by licensees and States, particularly with respect to their views on the degree of conservatism and the ease of application.

V. Nuclear Waste-Related Research (Open)

[Mr. Giorgio N. Gnugnoli was the Designated Federal Official for this part of the meeting.]

Dr. Hornberger observed that the ACNW was interested in waste-related research activities pursued by organizations outside the NRC. This research would provide some framework for evaluating the adequacy of the NRC technical investigations in the research and technical assistance programs. The Electric Power Research Institute (EPRI) and DOE support research and development (R&D) in many areas in the use of nuclear materials, some of which involve radioactive waste management.

Mr. Mark Gilbertson, Director, Office of Science and Risk Policy, DOE, discussed the Environmental Management Science Program (EMSP). He noted that DOE conducts separate research efforts in waste management (e.g., Office of Civilian Radioactive Waste Management, which oversees the disposal of spent nuclear fuel), but the EMSP is more focused on exploratory research, which is longer ranged in its expectations (i.e., results will be realized in the middle of the next century). The other sister offices in the Environmental Management Program (EMP) are more technology focused. The driving force for the EMSP was to infuse the Environmental Management Cleanup Program with more science and to perform basic research in order to better address long-term problems facing DOE. He stressed that an objective of the overall DOE research program was to bridge that gap between the more applied research being performed by large groups within the EMP and that of the EMSP.

Unlike some of the DOE programs that are heavily tied to the national laboratories, the EMSP is a competitive program that also funds universities and other private sector institutions. The user need is determined from the individual site needs and from technical people in the field; this user need factors into the development of the national call for research. Currently, two areas of research have been funded, and these areas involve HLW and decommissioning and decontamination (D&D). Mr. Gilbertson provided additional graphics showing the EMSP funding by EM problem area compared to the EMSP scientific research funding area.

Mr. Gilbertson explained the active recruitment program, which relies on the National Academy of Sciences and other forums to bolster the solicitation process. He pointed out that in the ensuing award structure, materials science plays a significant role, particularly because of areas such as D&D and a number of emergent issues with regard to corrosion and those associated with HWL. Areas that are lagging include analytical chemistry, in which there are many instrumentation issues.

Mr. Gilbertson observed that the next step was one of integration over a fairly large programmatic infrastructure in the EMP. The challenge is to portray a portfolio of 202 research projects

by means of reports and the World Wide Web (WWW). Publicizing the results is expected to engender more solicitations to further the work being done and is currently underway without duplication and inconsistency. This achievement furthers the EMSP's fundamental goal of deployment. Workshops are planned to evoke a degree of synergy among the principal investigators. It is expected that there will be cross-discipline discussions, and the research reports will become available. These annual reports will become the papers for this workshop, and poster boards in electronic format will be placed on the WWW page to help explain the progress that the researchers are making.

During the question-and-answer period, Mr. Gilbertson noted that there were not as many research institutions in the private sector being supported because these organizations are more interested in applied technical investigations, which are—by their nature—too short term to "fit" into the EMSP timeframes for exploratory research. Mr. Gilbertson acknowledged the "tension" in the program between applied technology and fundamental research, especially in the deployment decisions. Balancing between necessary and short-term needs for technology and having the patience for protracted and necessarily time-consuming basic research are difficult challenges.

As an example of where the NRC should focus its research interest, Mr. Gilbertson observed that regulatory agencies make the mistake of relying on short-sighted, quick-fix approaches to deal with fundamental scientific phenomena, such as ground water contamination, rather than pursuing a scientific approach that requires additional patience and research. He identified the National Science Foundation or the National Research Council as touchstones for trying to break out of the regulatory perspective, which can close approaches and strategies that should be considered.

Mr. John Kessler and Ms. Carol Hornibrook of EPRI described the research program pursued by EPRI on behalf of the U.S. electric power industry. A few themes ran throughout the presentations by the EPRI representatives:

- Total system performance assessments (TSPAs) and their requisite computer codes are used as the primary tool to set priorities in pursuing the EPRI research program. The EPRI TSPA code is called "IMARC," integrated multiple assumptions and release code.

- The research is closely keyed to the nuclear industry's concerns, such as the funding of the Nuclear Waste Fund and the disposition of the spent nuclear fuel (SNF) inventories being stored and maintained by the utilities.

- The three radionuclides that seemed to be indicators for performance throughout the significant pathways are Tc-99, I-129, and Np-237.

Mr. Kessler, EPRI, indicated that some level of industry interest existed in research on SNF storage, transportation, and the technical basis for extended dry storage because of the linkage of storage and transportation to the final disposition of the SNF.

Mr. Kessler then focused the rest of his presentation on waste disposal, specifically on SNF disposal at Yucca Mountain. He noted that NRC and EPRI had similar goals in conducting research for Yucca Mountain:

- Ensure sufficient independent understanding of basic physical processes
- Maintain independent but limited confirmatory research capability
- Develop licensing tools and technical bases to evaluate DOE's license application

He noted that the last goal is more NRC's purview but that EPRI had a stake in how the license was going to be evaluated. Goals more associated with the industry's perspective include the following:

- Evaluate DOE, NRC, and EPA technical progress
- Provide technical bases for industry input into the proposed Yucca Mountain performance standards and proposed legislation

- Suggest new data models, analysis techniques, and/or engineering approaches in target areas

EPRI's annual R&D budget is in the range of $500,000 to $1,000,000. This budget mandates concentrating efforts in areas having the greatest impact. EPRI's R&D focus is in three main areas: TSPA, technical bases for disposal regulations, and new approaches to resolve key technical issues. One of the key targets in using TSPA is to assess the importance of individual features, events, and processes (FEPs) that drive performance. IMARC has evolved from demonstrating the feasibility of performing a TSPA to comparing sensitivities between release- and dose-based standards. Mr. Kessler observed that EPRI's TSPA approach differs from NRC's and DOE's approaches. EPRI focused on variations in effects rather than variations in process-level model parameters. He then proceeded through a number of examples and submodels to point out facets of the EPRI TSPA conceptual model (e.g., container corrosion).

Within the constraints of the allowable budget, EPRI neglected some FEPs, which may be of greater interest to the NRC:

- Gas releases — Carbon-14, which because of previous work did not seem to be important
- Volcanism — Past work suggests that the probability is low
- Seismicity -- In light of very large drifts, EPRI believes that there is no problem
- Other issues — Examples include drift stability and thermo-mechanical and human intrusion

An example of the effects-oriented approach led to a base case result for the drinking water pathway only, which indicated that technetium and iodine were the primary contributors and neptunium was further out in the 100,000-year range. This result differs from DOE's and NRC's analysis.

EPRI has performed a key technical components analysis, just as has the NRC, but EPRI identified these components as having a big effect on either the calculation peak dose rates or the time of the peak. These key geosphere components include ground water flow, rate, and

distributions; geologic factors affecting transport, such as sorption and dispersion; the fraction of the repository that is wet; and the degree of fracture/matrix coupling. Key engineered barrier components are the container material, the use of a flow diversion barrier (also referred to as the "Richards Barrier"), dissolution time of the SNF, and the solubility of radionuclides. Key biosphere parameters include assumed exposure pathways and characteristics of the *hypothetical* individual.

Since the outcome of the EPA's implementation of the National Academy of Sciences Technical Yucca Mountain Standard Committee could significantly affect the industry's costs and schedules, EPRI funded work to provide a technical rationale to favor industry's positions and concerns. Some of the perspective from the industry included an approach that was dose based or risk based and protective of the local population, rather than a worldwide collective dose or some reasonable maximum exposure individual approach. Furthermore, only TSPA should be relied upon without subsystem performance criteria (e.g., ground water travel time). In terms of actual R&D, the approach was more in the form of TSPA exercises to focus on key components. TSPA analysis of potential container failure supported 1,000 years as the appropriate regulatory timeframe for performance.

EPRI's effort to identify new design and analysis opportunities through R&D is motivated by the desire to bolster confidence in regulatory decisions. TSPA is the main tool used for trying to decrease uncertainties, develop alternative reference approaches, and perhaps, improve repository design to enhance performance. The specific R&D areas include the following:

- Biosphere issues (exposure pathways and critical group definition)
- Richards capillary barrier
- Thermal loading
- Unsaturated zone flow and transport modeling
- Colloid-aided transport

A few notable aspects of this R&D effort include the consideration and cooperation with international efforts to study these areas, such as the Biosphere Model Validation Study, Phase II (BIOMOVS II), and to provide a dose assessment capability for TSPA because of the trends in congressional influence. Mr. Kessler noted with satisfaction that DOE is actively participating in the international exercises by joining the BIOMOVS II (now superseded by BIOMASS, Biosphere Modeling and Assessment) steering committee. The international community is focused on the reference biosphere (definition, system description, etc.). The motivation for EPRI is to achieve a broader level of consensus, and perhaps, acceptance of biosphere model development. This measure could provide for a greater degree of defensibility at licensing.

An example of resurfacing issues, once thought closed, is the colloid transport in fractures. Data collected have indicated that plutonium has moved over a kilometer in a few decades in certain areas in the Nevada Test Site as a result of weapons testing. Current modeling predictions did not indicate this observed phenomenon. Colloid transport is different than aqueous transport, and it may be faster. It is not known yet how relevant this fact is to Yucca Mountain; current ideas on colloid movement in the saturated zone and the unsaturated zone may need to be reconsidered. EPRI is funding research in the form of experiments and modeling for identifying important processes governing colloidal migration in the unsaturated zone.

Mr. Kessler concluded by noting that there are parallels between EPRI's and NRC's research programs (i.e., ensuring sufficient independent understanding of basic physical processes, maintaining independent but limited confirmatory research capability, and both have limited R&D budgets). There is a new EPRI-NRC memorandum of understanding regarding basic R&D, which is hoped will provide significant opportunities for future collaborative R&D.

In the following question-and-answer period, the following observations were made:

- EPRI priorities in research are established using the TSPA.

- Flexibility in the reapportionment of funding brought up an important attribute in conducting an efficient and cost-effective research program. EPRI commits approximately 50 percent of its funding at the beginning of the budget cycle and then allocates the remaining funds as need dictates.

- Almost all of EPRI's R&D in this area is contracted out, sometimes with internationals, and these contracts tend to be short term in nature.

- Areas in which more work is needed by NRC and/or DOE include container failure and fracture/matrix coupling.

- Conflicting operating modes will require modification of the repository strategy, for example, the use of backfill versus the need for ventilation for an "open repository" approach.

- The ideas for research are generated by a relatively small team of EPRI professionals, a development team, who uses IMARC, international symposia participation, and other sources of input to configure the research program.

- The EPRI annual research budget varies from $500,000 to $1,000,000 per year.

- Much of the EPRI effort is devoted to close issues that have associated uncertainties and, that could result in undue expense to the utilities in the disposal of SNF. In effect, the goal is to eliminate or reduce uncertainties that could result in unnecessary expense.

It was observed that international research efforts could provide a very cost-effective option for certain technical R&D, which might even find matching funding from those hosting the site investigations, depending on the particular issue being investigated. For example, a number of different countries are using the Canadian underground research laboratory for thermal and hydrologic testing at a modest cost.

Ms. Carol Hornibrook, EPRI, discussed EPRI's key research areas in LLW and radiation protection. After a brief update, she illustrated the focus of the EPRI research efforts in LLW. Part of the work performed on radiation exposure control is in systems, equipment, and components that would foster lower levels of radioactivity (use of depleted zinc, hydrogen-water chemistry, lithium addition, etc.). The topics she addressed included LLW, decommissioning, and radiation protection. The products of this research varied from a "tool box" of guidelines and reports to computer codes (e.g., WASTEWORKS — an optimization and decision-assisting computer code developed to help utilities identify current costs for dry active waste and for liquid waste in terms of treatment and handling at the site, and the associated labor requirements).

There was some EPRI research on storage because it was thought that the Barnwell LLW disposal site would close. This prospect raised concerns, so EPRI entered into a diverse research program for utility needs (e.g., collecting information on different waste forms that could be used for storage, different containers, and different container regimes).

The overall LLW R&D program is divided into five different areas (liquid processing, dry active waste, mixed waste, storage, and disposal). Currently, the majority of the research effort is dedicated to liquid processing. Previous efforts in the area of dry active waste were thought to be most productive for the industry's perspective because it was thought that the most cost savings could be achieved in this area.

Ms. Hornibrook commented on the "moving target" nature of LLW disposal (e.g., the fluctuation of disposal fees that influences whether a processing option is feasible) and on tools to assist in evaluating the most productive approach, one that balances the gain of a treatment strategy (e.g., volume reduction) with the additional costs over current techniques.

Ms. Hornibrook commented on perplexing conflicts in LLW management technologies. She focused on pressurized-water reactors in which a common safety criterion is to reduce the radioactivity released from the plant. However, this approach conflicts with the goals of

reducing volumes and cost. Many of the technologies are in use currently and EPRI relies on making these available to the utilities; some of the EPRI work is not development but demonstration of the applicability and value of such technologies. Ms. Hornibrook stated that many of these technologies and materials have been obtained from or in connection with international efforts in predisposal treatment of LLW (e.g., ion removal using a multibed analyzer).

In the area of mixed wastes, the main focus was to educate the utilities in understanding the regulations, the impacts that could be expected, and how to establish a mixed-waste management program. In addition, manuals have been prepared to provide current and emerging technologies for the management of mixed wastes, for example, the QSEP method employing molten metal, which vaporizes some material and results in a ceramic base material.

For the EPRI research on disposal, the majority of the work has focused on performance assessment, specifically on carbon-14. Regarding the radionuclides, the disposal facilities were most concerned about the possibility of meeting the 25-mrem standard. As in previous research areas, EPRI focused on site facility or activity characterization, source-term identification, and addressing the uncertainties. Because these uncertainties mostly involved gas generation, EPRI developed gas generation release analysis models.

The area of decommissioning is treated much the same as the other areas of EPRI activity. The strategy is in the implications of whether a plant is decommissioned or kept operating. An example is the collection and synthesis of industry comments on the MARSSIM. Further research will be allocated to site cleanup, site surveys, and dose assessment, specifically focusing on waste management and minimization technologies. As in all research activities, the main goal is cost reduction for waste management, within the constraints of safety.

There are three focus areas for the EPRI radiation protection research effort: worker risk minimization, effective dose equivalent, and hot particles. EPRI has responded to NEI's concerns in addressing the tradeoff between worker exposure to small particles as opposed to a stringent procedure involving protective clothing and quality control supervision. The point

was raised that the brief exposure to small particles was inherently safer than the traditional radiation approach, which would expose the health physics technician and others unnecessarily. In this type of research, EPRI's main thrust is to provide NEI with supporting data and information to properly negotiate with the NRC.

EPRI has performed further research in the area of dose distribution resulting from exposure to radionuclides. The goal in performing this research is to provide a means for balancing radiation safety and conventional industrial safety impacts. The ultimate goal would be to express radiation, chemical, and other health impacts in a commonly accepted manner so that the potential health impacts from these sources can be uniformly characterized.

In response to Dr. Hornberger, Ms. Hornibrook indicated that the past R&D work by the NRC in the area of LLW was very good (e.g., caps over waste trenches). When asked about the viability of the currently curtailed LLW research program, Ms. Hornibrook indicated that she only dealt with the disposal side of the issue and could only give an incomplete answer. The volume reduction effort was greatly aided by better waste characterization because many times, the radionuclide content is overestimated; when properly addressed, the volume reduction may lead to little or no activity concentration.

EPRI is funding some work in the issue of the linear, nonthreshold dosimetry concept, mostly to stay abreast of developments.

VI. Meeting With the Deputy Director, Division of Waste Management, NRC Office of Nuclear Material Safety and Safeguards (NMSS) (Open)

[Mr. Richard K. Major was the Designated Federal Official for this part of the meeting.]

Ms. Margaret Federline, accompanied by Dr. Michael Bell, Acting Chief, Performance Assessment Branch, DWM, discussed several issues with the Committee. The staff recently held a decommissioning workshop to look for ways to improve the decommissioning review process. The workshop was attended by more than 80 people from the nuclear industry. The workshop participants sought a performance-based approach for decommissioning and were interested in doing as much remediation as possible under an existing facility's operating license. Ms. Federline noted that licensees had urged the staff to allow them the flexibility of using either the RESRAD or the DandD modeling tools.

Dr. Bell discussed a recent technical exchange between the NRC and the DOE on performance assessment models. This was the third in a series of technical exchanges with the DOE. The staff was able to outline key concerns to be addressed by DOE in either the VA or the license application. This is part of the staff's "no surprises" approach to licensing. The staff did identify areas in which further interactions will be necessary, including the solubility of neptunium-237, matrix diffusion models, and the use of C-22, a nickel and iron alloy in waste package canisters. Dr. Hornberger also noted that the technical exchange focused on the need for transparency in DOE's modeling approach and on the issue of early or juvenile canister failures.

VII. Trip Report by ACNW Member, Charles Fairhurst (Open)

[Mr. Richard K. Major was the Designated Federal Official for this part of the meeting.]

Dr. Fairhurst described some of the highlights of his recent participation in the ANDRA (French Radioactive Waste Management Agency) waste repository meeting. Among the topics of

discussion at this meeting were waste retrievability studies for each of the three waste repository sites under consideration in France. Costs were estimated for each phase of repository life, including waste emplacement, backfill, and complete closure. Also under consideration is the concept of monitored retrievable storage at the waste repository locations.

Dr. Fairhurst also discussed several designs for the disposal of intermediate level wastes, including silos hewn out of granite.

The French are considering selective emplacement of wastes with an offset distance from underground fractures that might be a pathway for water. He also discussed the fact that other geometries besides circular are being studied for emplacement drifts to provide improved stability in the face of earthquakes. In each underground facility laboratory, facilities are being prepared for earth science experimentation that may be only slightly directed toward repository performance. He also explained that the French are paying minimal attention to waste repository human intrusion scenarios.

VIII. Executive Session (Open)

[Richard Major was the Designated Federal Official for this part of the meeting.]

A. Future Meeting Agenda (Open)

Appendix IV summarizes the proposed items endorsed by the Committee for the 100th ACNW Meeting, April 21—23, 1998.

B. Future Committee Activities (Open)

The ACNW will hold its 100th meeting on April 21—23, 1998.

generators. The information provided on NRC Form 542 permits the States and Compacts to know the original generators of low-level waste, as authorized by the Low-Level Radioactive Waste Policy Amendments Act of 1985, so they can ensure that waste is disposed of in the appropriate Compact.

A copy of the final supporting statement may be viewed free of charge at the NRC Public Document Room, 2120 L Street, NW (lower level), Washington, DC. OMB clearance requests are available at the NRC worldwide web site (http://www.nrc.gov) under the FedWorld collection link on the home page tool bar. The document will be available on the NRC home page site for 60 days after the signature date of this notice.

Comments and questions should be directed to the OMB reviewer by April 10, 1998:

Martin Offutt, Office of Information and Regulatory Affairs (3150–0164, –0165, –0166), NEOB–10202, Office of Management and Budget, Washington, DC 20503.

Comments can also be submitted by telephone at (202) 395–3084.

The NRC Clearance Officer is Brenda Jo. Shelton, 301–415–7233.

Dated at Rockville, Maryland, this 5th day of March 1998.

For the Nuclear Regulatory Commission.

Brenda Jo. Shelton,

NRC Clearance Officer, Office of the Chief Information Officer.

[FR Doc. 98–6213 Filed 3–10–98; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50–424 and 50–425]

Southern Nuclear Operating Company, Inc., et al. (Vogtle Electric Generating Plant, Units 1 and 2); Exemption

I

Southern Nuclear Operating Company, Inc., et al. (the licensee) is the holder of Facility Operating License Nos. NPF–68 and NPF–81, for the Vogtle Electric Generating Plant (VEGP), Units 1 and 2, respectively. The licenses provide, among other things, that the licensee is subject to all rules, regulations, and orders of the Commission now or hereafter in effect.

The VEGP facility consists of two pressurized-water reactors located at the licensee's site in Burke County, Georgia.

II

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.71, "Maintenance of records, making of reports," paragraph (e)(4) states, in part, that "Subsequent revisions [to the Final Safety Analysis Report (FSAR)] must be filed annually or 6 months after each refueling outage provided that the interval between successive updates [to the FSAR] does not exceed 24 months." The VEGP, Units 1 and 2, share a common FSAR; therefore, this rule requires the licensee to update the same document within 6 months after a refueling outage for either unit. By letter dated January 23, 1998, the licensee requested an exemption from the requirements of 10 CFR 50.71(e)(4).

III

Section 50.12(a) of 10 CFR, "Specific exemptions," states that:

> The Commission may, upon application by any interested person, or upon its own initiative, grant exemptions from the requirements of the regulations of this part, which are (1) Authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security. (2) The Commission will not consider granting an exemption unless special circumstances are present.

Section 50.12(a)(2)(ii) of 10 CFR states that special circumstances are present when "Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. . . ." As noted in the staff's supporting Safety Evaluation, the licensee's proposed schedule for FSAR updates will ensure that the VEGP FSAR will be maintained current within 24 months of the last revision and the interval for submission of the 10 CFR 50.59 design change report will not exceed 24 months. The proposed schedule fits within the 24-month duration specified by 10 CFR 50.71(e)(4). Literal application of 10 CFR 50.71(e)(4) would require the licensee to update the same document within 6 months after a refueling outage for either unit; a more burdensome requirement than intended. Accordingly, the Commission has determined that special circumstances are present as defined in 10 CFR 50.12(a)(2)(ii). The Commission has further determined that, pursuant to 10 CFR 50.12, the exemption is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security. The Commission hereby grants the licensee an exemption from the requirements of 10 CFR 50.71(e)(4) to submit updates to the VEGP FSAR within 6 months of the VEGP Unit 2 refueling outage. The licensee will be required to submit updates to the VEGP FSAR within 6 months after the Unit 2 refueling outage. With the current length of fuel cycles, FSAR updates would be submitted every 18 months, but not to exceed 24 months from the last submittal.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant effect on the quality of the human environment (63 FR 10248).

This exemption is effective upon issuance.

For the Nuclear Regulatory Commission.

Dated at Rockville, Maryland, this 5th day of March 1998.

Samuel J. Collins,

Director, Office of Nuclear Reactor Regulation.

[FR Doc. 98–6214 Filed 3–10–98; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Nuclear Waste; Notice of Meeting

The Advisory Committee on Nuclear Waste (ACNW) will hold its ~~95th~~ 99th meeting on March 23–25, 1998, Room T–2B3, 11545 Rockville Pike, Rockville, Maryland.

The entire meeting will be open to public attendance.

The schedule for this meeting is as follows:

Monday, March 23, 1998—8:30 A.M. until 6:00 P.M.

Tuesday, March 24, 1998—8:30 A.M. until 6:00 P.M.

Wednesday, March 25, 1998—8:30 A.M. until 4:00 P.M.

A. *Meeting with Commissioner McGaffigan*—The Committee will meet with the Commissioner to discuss items of mutual interest.

B. *Nuclear Waste Related Research*—The Committee will review various aspects of waste-related research underway or planned in preparation for sending a report to the Commission. Participants may include representatives of the NRC staff, the nuclear industry, and possibly individuals representing foreign programs.

C. *Decommissioning Guidance*—The Committee will review proposed guidance for implementing the recent final rule on radiological criteria for license termination. Guidance to be reviewed will include documents on: surveys, dose modeling, restricted release criteria, and ALARA (as low as is reasonably achievable) criteria.

Participation by the NRC staff and industry is anticipated.

D. *Risk-Informed, Performance-Based Regulation*—The Committee will review recent agency initiatives on risk-informed, performance-based regulation.

E. *Meeting with NRC's Director, Division of Waste Management, Office of Nuclear Material Safety and Safeguards*—The Committee will meet with the Director to discuss recent developments within the division such as developments at the Yucca Mountain project, rules and guidance under development, available resources, and other items of mutual interest.

F. *Preparation of ACNW Reports*—The Committee will discuss planned reports, including risk-informed, performance-based regulation, waste related research, regulatory guides dealing with decommissioning, and other topics discussed during this and previous meetings as the need arises.

G. *Committee Activities/Future Agenda*—The Committee will consider topics proposed for future consideration by the full Committee and Working Groups. The Committee will discuss ACNW-related activities of individual members.

H. *Miscellaneous*—The Committee will discuss miscellaneous matters related to the conduct of Committee activities and organizational activities and complete discussion of matters and specific issues that were not completed during previous meetings, as time and availability of information permit.

Procedures for the conduct of and participation in ACNW meetings was published in the Federal Register on September 2, 1997 (62 FR 46382). In accordance with these procedures, oral or written statements may be presented by members of the public, electronic recordings will be permitted only during those portions of the meeting that are open to the public, and questions may be asked only by members of the Committee, its consultants, and staff. Persons desiring to make oral statements should notify the Chief, Nuclear Waste Branch, Mr. Richard K. Major, as far in advance as practicable so that appropriate arrangements can be made to schedule the necessary time during the meeting for such statements. Use of still, motion picture, and television cameras during this meeting will be limited to selected portions of the meeting as determined by the ACNW Chairman. Information regarding the time to be set aside for taking pictures may be obtained by contacting the Chief, Nuclear Waste Branch, prior to the meeting. In view of the possibility that the schedule for ACNW meetings may be adjusted by the Chairman as necessary to facilitate the conduct of the meeting, persons planning to attend should notify Mr. Major as to their particular needs.

Further information regarding topics to be discussed, whether the meeting has been canceled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by contacting Mr. Richard K. Major, Chief, Nuclear Waste Branch (telephone 301/415–7366), between 8:00 A.M. and 5:00 P.M. EST.

ACNW meeting notices, meeting transcripts, and letter reports are now available on FedWorld from the "NRC MAIN MENU." Direct Dial Access number to FedWorld is (800) 303–9672; the local direct dial number is 703–321–3339.

Dated: March 6, 1998.

Andrew L. Bates,

Advisory Committee Management Officer.

[FR Doc. 98–6286 Filed 3–10–98; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

Biweekly Notice; Applications and Amendments to Facility Operating Licenses Involving No Significant Hazards Considerations

I. Background

Pursuant to Public Law 97–415, the U.S. Nuclear Regulatory Commission (the Commission or NRC staff) is publishing this regular biweekly notice. Public Law 97–415 revised section 189 of the Atomic Energy Act of 1954, as amended (the Act), to require the Commission to publish notice of any amendments issued, or proposed to be issued, under a new provision of section 189 of the Act. This provision grants the Commission the authority to issue and make immediately effective any amendment to an operating license upon a determination by the Commission that such amendment involves no significant hazards consideration, notwithstanding the pendency before the Commission of a request for a hearing from any person.

This biweekly notice includes all notices of amendments issued, or proposed to be issued from February 13, 1998, through February 27, 1998. The last biweekly notice was published on February 25, 1998 (63 FR 9589).

Notice of Consideration of Issuance of Amendments to Facility Operating Licenses, Proposed No Significant Hazards Consideration Determination, and Opportunity for a Hearing

The Commission has made a proposed determination that the following amendment requests involve no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. The basis for this proposed determination for each amendment request is shown below.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received before action is taken. Should the Commission take this action, it will publish in the Federal Register a notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

Written comments may be submitted by mail to the Chief, Rules and Directives Branch, Division of Administration Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, and should cite the publication date and page number of this Federal Register notice. Written comments may also be delivered to Room 6D22, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland from 7:30 a.m. to 4:15 p.m. Federal workdays. Copies of written comments received may be examined at the NRC Public

APPENDIX II

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

March 18, 1998

SCHEDULE AND OUTLINE FOR DISCUSSION
99TH ACNW MEETING
MARCH 23-25, 1998

Monday, March 23, 1998, Two White Flint North, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland

1) 8:30 - ~~8:40~~ 8:35 A.M. Opening Remarks by the ACNW Chairman (Open)
- 1.1) Opening Statement (BJG/RKM)
- 1.2) Items of Current Interest

2) ~~8:40~~ 8:35 - ~~9:15~~ 8:45 A.M. Discussion of Expected Outcomes from this Meeting (Open) (BJG/RKM)
- 2.1) Letter Reports
- 2.2) Future Reviews
- 2.3) Attendance at Outside Meetings

3) 9:15 - ~~10:15~~ 10:20 A.M. Meeting with Commissioner Edward McGaffigan, Jr. (Open) (BJG/LGD)
The Commissioner will discuss items of mutual interest.

~~10:15~~ 10:20 - 10:30 A.M. * * *BREAK* * *

4) ~~10:30~~ 10:35 - 12:00 NOON Discussion of Issues on Risk-Informed, Performance-Based Regulation (Open) (BJG/ACC)
- Meeting with NMSS staff to discuss application of RIPB regulations
- Discuss elements of ACNW report

~~12:00~~ 12:04 - 1:00 P.M. * * * LUNCH* * *

5) ~~1:00~~ 1:05 - 5:30 P.M. Decommissioning Guidance (Open) (RGW/HJL)
(BREAK 3:00-3:15) ~~3:00-3:15~~ 2:50-3:05
Review of proposed final guidance for implementing the recent final rule on radiological criteria for license termination
a) dose modeling
b) surveys
(BREAK 4:25-4:40) 3:05-4:25

6) ~~5:30 - 6:30~~ 8:45 - 9:15 P.M. Committee Activities/Future Agenda (Open) (BJG/RKM)
- 6.1) Set agenda for 100th ACNW Meeting April 21-23, 1998
- 6.2) Review topics for out months

4:40 - 6:00 p { Preparation of ACNW Reports
7:00 - 8:50 p
(Break 6:00-7:00)

6.3) Review EDO response to recent Committee letters
6.4) Recent and planned attendance at outside meetings:
a) March '98 WM '98 (HJL)
b) March '98 ANDRA Meeting (CF)
c) March '98 Tech. Exchange at CNWRA (GMH)

8:50
~~6:30~~ **P.M.** ***RECESS***

Tuesday, March 24, 1998, Two White Flint North, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland

7) 8:30 - 8:35 A.M. Opening Remarks by ACNW Chairman (Open) (BJG/RKM)

10:20
8) 8:35 - ~~12:00~~ P.M. Decommissioning Guidance - Continued (Open) (RGW/HJL)
c) Restricted release criteria
d) ALARA criteria
e) Comments by Nuclear Energy Institute
f) Elements of an ACNW report

10:35 - 12:55 Preparation of ACNW Rpts.

12:00 - 1:00 P.M. ***LUNCH*** (on table)

12:55 - 1:05 Break

9) ~~1:00~~ - 5:00 P.M. Nuclear Waste Related Research (Open)
1:05 5:00 (GMH/GNG-HJL)
(BREAK ~~3:00 3:15~~) Discussion of nuclear waste related research in preparation of a
3:45-4:05 report to the Commission, with representatives of:
9.1) EPRI/NEI
9.2) DOE
9.3) NRC Staff

10) 5:00 - 6:00 P.M. Preparation of ACNW Reports (Open)
Discuss possible ACNW reports on the following topics:
10.1) Decommissioning Guidance (RGW/HJL)
10.2) RIPB regulation (BJG/ACC)
10.3) Waste Related Research (GMH/GNG)
10.4) Viability Assessment (GMH/LGD)

6:00 P.M. **RECESS**

Wednesday, March 25, 1998, Two White Flint North, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland

8:35 8:37
11) ~~8:30~~ - 8:35 A.M. Opening Remarks by ACNW Vice-Chairman (Open) (GMH/RKM)

8:37 9:10

12) ~~8:35~~ - ~~9:35~~ A.M. Meeting with NRC's Deputy Director, Division of Waste Management, Office of Nuclear Material Safety and Safeguards (Open) (GMH/RKM)
A current events discussion with Margaret Federline on developments at Yucca Mountain, rules and guidance under development, available resources, and other items of mutual interest.

9:10 - 10:45 and 11:10 - 12:50

13) ~~9:35~~ - 12:00 P.M. Continue Preparation of ACNW Reports (Open)
Continue preparation of ACNW reports as noted in item 10

10:00 - 10:15 Break

12:00 - 1:00 P.M. ***LUNCH***

~~**4:00 P.M.**~~ ***ADJOURN***

- Presentation time should not exceed 50 percent of the total time allocated for a specific item. The remaining 50 percent of the time is reserved for discussion.

- Number of copies of the presentation materials to be provided to the ACNW - 35.

10:45 - 11:10 Committee Activities (Cont'd)

APPENDIX III
MEETING ATTENDEES
99TH ACNW MEETING
MARCH 23–25, 1998

ACNW STAFF	1st Day	2nd Day	3rd Day
Dr. Andrew Campbell	X	X	X
Ms. Lynn Deering	X	X	X
Ms. Michele Kelton	X	X	X
Dr. John Larkins	X	X	X
Mr. Howard Larson	X	X	X
Mr. Richard Major	X	X	X
Dr. Gail Marcus	X	X	X

ATTENDEES FROM THE NUCLEAR REGULATORY COMMISSION

MARCH 23, 1998

C. Daily	RES
S. Coplan	NMSS
C. Jones	NMSS
J. Kotra	NMSS
P. Reed	RES
C. Paperiello	NMSS
D. Sorig	NMSS
B. Leslie	NMSS
S. Rosenberg	NMSS
C. McKenney	NMSS
C. Trotttier	RES
S. McGuire	RES
T. Mo	RES

MARCH 24, 1998

C. McKenney	NMSS
S. Coplan	NMSS
T. Mo	RES
B. Ibrahim	NMSS
S. McGuire	RES
P. Reed	RES
J. Philip	RES
R. Johnson	NMSS

MARCH 25, 1998

M. Bell	NMSS
R. Johnson	NMSS
K. Stablein	NMSS
B. Leslie	NMSS

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

MARCH 23, 1998

E. Scalsky	The Environmental Co.
R. Wallace	USGS
P. Davis	Sandia Labs
J. York	Booz Allen & Hamilton
P. Phibbs	Nuclear Waste News
P. Krishna	M&O/TRW
R. Lanza	ICF Kaiser
F. Galpin	Rogers Assoc. Eng.
G. Roseboom	USGS
J. Russell	CNWRA
J. Savage	Morgan Lewis & Bockus
P. LaPlante	CNWRA
C. McDaniel	The EOP Group

MARCH 24, 1998

R. Wallace	USGS
F. Galpin	Rogers Assoc. Engineering
E. Scalsky	The Environmental Co.
C. McDaniel	The EOP Group
J. Savage	Morgan Lewis & Bockus
R. Andersen	NEI
J. Kessler	EPRI
M. Gilbertson	DOE
D. Schultheise	EPA
B. Barnard	NWTRB
C. Hornibrook	EPRI
G. Roseboom	USGS

MARCH 25, 1998

E. Scalsky	The Environmental Co.
R. Wallace	USGS
M. Michewicz	DOE
R. Andersen	NEI
J. York	Booz Allen & Hamilton
J. Russell	CNWRA
W. Patrick	CNWRA
B. Sagar	CNWRA
D. Schultheise	EPA

APPENDIX IV: FUTURE AGENDA

The Committee agreed to consider the following during the 100th ACNW Meeting, April 21–23, 1998:

- **Viability Assessment (VA) Guidance** — The NRC staff will discuss guidance being prepared for its review of the Department of Energy's (DOE's) Yucca Mountain Viability Assessment.

- **NEI Comments on VA** — Representatives from the NEI will comment on DOE's viability assessment for the proposed HLW repository at Yucca Mountain.

- **Meeting with the NRC Deputy Executive Director for Regulatory Programs** — Mr. Thompson will discuss a number of issues of mutual interest with the Committee.

- **Total System Sensitivity Analysis for Yucca Mountain** — The NRC staff will present results from their Total System Sensitivity Analysis for Yucca Mountain. The staff will prioritize the relative contribution to risk from various sources and study the effects of these various contributors in combination.

- **NRC's Nuclear Waste-Related Research Program** — NRC's nuclear waste-related research program and technical assistance will be reviewed so that the Committee can provide input on nuclear safety-related research to a report to the Commission.

- **Nuclear Waste-Related Rulemaking** - The Committee will hear a briefing on the transfer of the rulemaking process in nuclear waste-related areas from NRC's Office of Nuclear Regulatory Research to the Office of Nuclear Material Safety and Safeguards.

- **Meeting with the Director, DOE's Office of Civilian Radioactive Waste Management** - Mr. Lake Barrett will provide an overview of DOE high-level waste activities.

- **Meeting with the Director, Division of Waste Management, NRC Office of Nuclear Material Safety and Safeguards** — The Committee will meet with the Director to discuss recent developments within the division such as developments at the Yucca Mountain repository, rules and guidance under development, available resources, and other items of mutual interest.

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- **Preparation of ACNW Reports** — The Committee will discuss planned reports, including: waste-related research, regulatory guides dealing with decommissioning, comments on DOE's Viability Assessment, and other topics discussed during this and previous meetings.

APPENDIX V

LIST OF DOCUMENTS PROVIDED TO THE COMMITTEE

[Note: Some documents listed below may have been provided or prepared for Committee use only. These documents must be reviewed prior to release to the public.]

MEETING HANDOUTS

AGENDA ITEM NO.	DOCUMENTS
4	**Discussion of Issues on Risk-Informed, Performance-Based Regulation**
	1. Risk-Informed, Performance Based Regulation, An Office of Nuclear Material Safety and Safeguards Perspective, presented by Seth M. Coplan, Performance Assessment & HLW Integration Branch, DWM, NMSS, dated March 23, 1998 **[Viewgraph]**
5	**Decommissioning Guidance**
	2. NRC's Final Rule on Radiological Criteria for Decommission, presented by Cheryl A. Trottier, Radiation Protection and Health Effects Branch (RPHEB), Division of Regulatory Applications (DRA), RES, undated **[Viewgraph]**
	3. Draft NUREG-1549: Decision Methods for Dose Assessment to Comply With Radiological Criteria for License Determination, presented by Christine Daily, RPHEB, DRA, RES, dated, March 23, 1998 **[Viewgraph]**
	4. Method to Conduct a Final Status Survey, presented by Stephen McGuire, RPHEB, DRA, RES, undated **[Viewgraph]**
	5. NEI Perspective on NRC Rule and Regulatory Guidance for Site Cleanup and License Termination, presented by Ralph L. Andersen, NEI, dated March 24, 1998 **[Viewgraph]**
	6. Decommissioning Regulatory Guides, ACNW Meeting Handout, provided by Howard J. Larson, ACNW, undated **[Handout 2, Agenda Item #5]**
	7. Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), NUREG-1575, Final, December 1997

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AGENDA ITEM NO.	DOCUMENTS
5 (cont'd)	**Decommissioning Guidance**
	8. Decommissioning Guidance, ACNW Meeting Handout, provided Howard J. Larson, ACNW, Workshop for Routine Materials Decommissioning Cases, dated March 20, 1998 **[Handout , Agenda Item 5]**
6	**Committee Activities/Future Agenda**
	9. Trip Report, NRC-DOE Technical Exchange on Total Systems Performance, March 17—19, 1998, by George M. Hornberger, ACNW Member **[Handout]**
9	**Nuclear Waste-Related Research**
	10. Environmental Management Science Program, presented by Mark A. Gilbertson, Director, Office of Science and Risk Policy, EM-52, DOE, undated **[Viewgraph]**
	11. EPRI'S LLW Research & Development Program, Update on Key Research Areas and Where Research Effort are Focused, presented by Carol Hornibrook, EPRI Manager, LLW and Radiation Protection, dated March 24, 1998 **[Viewgraph]**
	12. Title Core Capabilities Related to NRC Radioactive Waste-Related Research and Technical Assistance, provided by Giorgio Gnugnoli, ACNW **[Handout 9.1, Agenda Item 9]**

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MEETING NOTEBOOK CONTENTS

TAB NUMBER **DOCUMENTS**

1 Opening Remarks by ACNW Chairman

1. Introductory Statement by the ACNW Chairman, Monday, March 23, 1998
2. Items of Current Interest, undated
3. Introductory Statement by the ACNW Chairman, Second Day, Tuesday, March 24, 1998
4. Introductory Statement by the ACNW Chairman, Third Day, Wednesday, March 25, 1998

3 Meeting With Commissioner McGaffigan

5. Status Report
6. Memorandum from John C. Hoyle, Secretary, NRC, to L. Joseph Callan, Executive Director for Operation (EDO), Subject: Staff Requirements - SECY-97-300 — Proposed Strategy for Development of Regulations Governing Disposal of High-Level Radioactive Wastes in a Proposed Repository at Yucca Mountain, Nevada, dated March 6, 1998
7. Commission Voting Record (Revised), Decision Item, SECY-97-300, dated March 11, 1998

4 Discussion of Issues on Risk-Informed, Performance-Base Regulation

8. Status Report
9. Memo from Chairman Shirley Ann Jackson, Chairman, NRC, to B. John Garrick, Chairman, ACNW, Subject: "Discussion of Risk-Informed, Performance-Based Regulation" (Draft paper included in attachment), dated March 11, 1998
10. Draft NMSS/DWM paper on "Risk-Informed, Performance-Based Regulation, or Risk-Informed, Less-Prescriptive Regulation in the Office of Nuclear Material Safety and Safeguards." **[PREDECISIONAL- Internal ACNW Use Only]**
11. Facsimile from Giorgio Gnugnoli, ACNW, to B. John Garrick, ACNW, Subject: ACRS Input on Chairman's White Paper, dated March 6, 1998 **[PREDECISIONAL - Internal ACNW Use Only)**
12. Memo from R. L. Seale, Chairman, ACRS, to The Honorable Shirley Ann Jackson, Chairman, NRC, Subject: ACRS Comments on Draft Paper on Risk-Informed, Performance-Based Regulation, dated March 11, 1998.

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MEETING NOTEBOOK CONTENTS (CONT'D)

TAB NUMBER	DOCUMENTS
4 (cont'd)	**Discussion of Issues on Risk-Informed, Performance-Base Regulation**

13. Memo from Andy Campbell, ACNW, to ACNW Members, Subject: Risk-Informed, Performance-Based Regulation in NMSS," dated February 17, 1998 **[Included are the following: SRM dated April 15, 1997, COMSECY 96-061 - DSI-12, Partial Transcript of the 448th Meeting of the Advisory Committee on Reactor Safeguards on February 5,1998]**
14. Memo from Andy Campbell, ACNW, to ACNW Members, Subject: "Use of Probabilistic Risk Assessment Methods In Nuclear Regulatory Activities, Final Policy Statement," dated September 11, 1995 **[PRA Policy Statement included in attachment]**
15 E-mail, memo from Andy Campbell, ACNW, to B. John Garrick, Chairman ACNW, re: Risk-Informed, Performance-Based Regulation, dated March 10, 1998 **[PREDECISIONAL - Prepared for Internal Committee Use]**
16 E-mail, memo from George Hornberger, ACNW, to B. John Garrick, Chairman ACNW, re: "Comments on Risk-Informed, Performance-Based Regulation," dated March 9, 1998 **[PREDECISIONAL - Prepared for Internal Committee Use]**
17. E-mail, memo from B. John Garrick, Chairman, ACNW, to ACNW Members and Staff, re: "Source Material for Response to Chairman Jackson's Request for Comments from ACNW on the Draft Paper Discussion on Risk-informed, Performance-based Regulation Dated March 11, 1998," dated March 16, 1998

5 Decommissioning Guidance

18. Status Report
19. Memo from H. J. Larson, ACNW, to ACNW Members, Subject: SECY-98-025, "Revised Schedule for Guidance in Support of Final Rule on Radiological Criteria for License Termination," February 17, 1998, dated February 27, 1998
20. Memo from Stephen A. McGuire, RES, to Cheryl A. Trottier, RES, re "Workshop on Demonstrating Compliance with the Radiological Criteria for License Termination—Analyses to Demonstrate ALARA, Net Public Harm, Not Technically Achievable and Prohibitively Expensive," dated December 24, 1997

MEETING NOTEBOOK CONTENTS (CONT'D)

TAB NUMBER	DOCUMENTS
5 (cont'd)	**Decommissioning Guidance**

21. Draft Regulatory Guide, "Demonstrating Compliance with the Radiological Criteria for License Termination" - A. Introduction (including the following four modules) and Draft NUREG-1549 "Using Decision Methods for Dose Assessment to Comply With Radiological Criteria for License Determination:"
22. SECY-97-046A, "Final Rule on Radiological Criteria for License Termination," dated March 28, 1997
23. "Final Rule, Radiological Criteria for License Termination" And, for Completeness, "Final Rule, Radiological Criteria for License Termination, Uranium Recovery Facilities"
24. Letter from Shirley A. Jackson, Chairman, NRC, to Carol A. Browner, Administrator, EPA, re EPA OSWER No. 9200.4-18 entitled "Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination," dated December 12, 1997
25. Memo from H. J. Larson to ACNW Members Subject: SECY-98-028, "Regulatory Options for Setting Standards on Clearance of Materials and Equipment Having Residual Activity," February 19, 1998, dated February 27, 1998
26. Memo from Malcolm R. Knapp to L. Joseph Callan, EDO, "Commission Paper Forwarding Guidance in Support of Final Rule on Radiological Criteria for License Termination," dated March 9, 1998 (w/attachments)

    1. MARSSIM
    2. Draft NUREG-1505,"A Nonparametric Statistical Methodology for the Design and Analysis of Final Status Decommissioning Surveys
    3. Draft NUREG-1507, "Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions"
    4. NUREG-1549, "Decision Methods for Dose Assessment to Comply with Radiological Criteria for License Termination"

MEETING NOTEBOOK CONTENTS (CONT'D)

TAB NUMBER	DOCUMENTS
5 (cont'd)	**Decommissioning Guidance**
	5. NUREG-5512, "Residual Radioactive Contamination From Decommissioning, Vol.1, Technical Basis for Translating Contamination Levels to Annual Total Effective Dose Equivalent"
6	**Committee Activities/Future Agenda**
	27. Agenda for 100th ACNW Meeting, April 21–23, 1998
	28. Set Agenda for Out Months through October 1998
	29. Executive Director for Operations' List of Future Meeting Topics
	30. Reconciliation of Executive Director for Operations' Responses to Recent ACNW Reports
	31. Civilian Radioactive Waste Management Office M&O Meeting List and ACNW 1998 Calendar
	32. Past Meeting Discussion and Future Planned Attendance at Outside Meetings
9	**NRC's Nuclear Waste-Related Research**
	33. Status Report
	34. Current Draft of the ACRS' Report to the Commission on the NRC Research Program, May 1998 **[PREPARED FOR INTERNAL COMMITTEE USE]**
	35. Draft White Paper by G. Hornberger
	36. Partial ACNW staff comments
	37. Excerpt from ACRS 450th Meeting on Deferred Research
	Handout slides on Deferred Research
	Handout slides on Core Capabilities
	38. Copy of ACNW Approved Insert to ACNW Report
	39. Excerpt from Conference Report for Energy Reorganization Act of 1974: Commission Research Activities
	40. SECY-97-220 Implementation of DSI 22 Research, Sept. 30, 1997
	41. Revised Scoping Document

MEETING NOTEBOOK CONTENTS (CONT'D)

TAB NUMBER	DOCUMENTS
13	**Meeting With the Deputy Director, Division of Waste Management, NRC's Office of Nuclear Material Safety and Safeguards**
	42. Status Report