

**U.S. NUCLEAR WASTE TECHNICAL REVIEW BOARD
FISCAL YEAR 2001 PERFORMANCE PLAN and
PERFORMANCE EVALUATION**

The NWTRB's General Goals and Strategic Objectives

The national goal for radioactive waste management established by Congress in the Nuclear Waste Policy Act of 1982 (NWPA) and the Nuclear Waste Policy Amendments Act of 1987 is safe disposal of civilian spent nuclear fuel and high-level radioactive waste in a permanent geologic repository at a suitable site or sites. In the acts, Congress directed the U.S. Department of Energy (DOE) to characterize a site at Yucca Mountain, Nevada, to determine its suitability as the potential location of a permanent repository for spent nuclear fuel and high-level radioactive waste. Congress charged the U.S. Nuclear Waste Technical Review Board with reviewing the technical and scientific validity of the Secretary of Energy's activities associated with implementing the NWPA, including characterizing the Yucca Mountain site and packaging and transporting the waste. The Board's general goals have been established in accordance with its congressional mandate.*

General Goals

To accomplish its congressional mandate, the Board has established four general goals.

1. Ensure that technical and scientific activities undertaken by the DOE related to characterizing and analyzing the natural components of a potential Yucca Mountain repository and predicting the performance of a potential repository establish a sound technical basis for a decision on whether to recommend the site for repository development.
2. Ensure that technical and scientific activities undertaken by the DOE related to evaluating and designing the repository and waste packages are well integrated and establish a sound technical basis for designing the repository system, including the engineered barrier system (EBS).
3. Ensure that technical and scientific activities undertaken by the DOE related to packaging, handling, and transporting spent nuclear fuel and high-level radioactive waste to a potential repository are well integrated and establish a sound technical basis for designing and operating a waste management system.
4. Ensure that technical and scientific performance-confirmation activities undertaken by the DOE establish a sound technical basis for operating a repository, reducing uncertainties related to repository performance, and revising repository and waste package designs. (Will apply only if the site recommendation is approved.)

* In February 2002, the Secretary of Energy and the President recommended the Yucca Mountain site for repository development. If the State of Nevada disapproves the recommendation, Congress will debate a "Resolution of Approval" later this year. The Board's goals and objectives will be revised to reflect the outcome of these deliberations.

Strategic Objectives

To achieve its general goals, the Board has established the following long-term objectives.

1. Objectives Related to the Natural Components of the Repository System and Predicting Repository Performance

- 1.1. Evaluate the technical and scientific validity of DOE studies, testing, and analyses supporting a decision on whether to recommend the Yucca Mountain site.
- 1.2. Evaluate the analyses and investigations pertaining to hydrologic and other natural processes at the Yucca Mountain site and at related analogue sites that establish the foundation for predicting repository performance.
- 1.3. Review the technical and scientific validity of models used to predict repository performance.
- 1.4. Evaluate the DOE's progress in developing a safety strategy for the Yucca Mountain site.
- 1.5. Monitor progress in completing development of standards and regulatory guidelines for a potential Yucca Mountain repository.
- 1.6. Review the *Record of Decision* and maintain awareness of legal challenges to the final environmental impact statement (EIS) for a potential Yucca Mountain repository.

2. Objectives Related to the Engineered Components of the Repository System

- 2.1. Evaluate repository and waste package designs, including the technical bases for the designs.
- 2.2. Review the progress or results of materials testing being conducted to address uncertainties about waste package performance.
- 2.3. Assess the integration of science and engineering in the DOE program, paying particular attention to the effects of site-characterization studies (e.g. modeling, testing, and analyses of thermal and mechanical effects) on repository and waste package designs.

3. Objectives Related to the Waste Management System

- 3.1. Evaluate the accuracy and reasonableness of analyses, methods, and major assumptions used by the DOE in estimating health and safety risks associated with transporting spent nuclear fuel and high-level radioactive waste.

- 3.2. Review the adequacy of DOE plans for developing the transportation infrastructure and determine the effort needed to develop a large-scale transportation capability.
- 3.3. Review the adequacy of the DOE's plans for safely handling and packaging spent nuclear fuel and high-level radioactive waste for transport to a permanent repository.
- 3.4. Evaluate the effectiveness of the DOE's efforts to integrate the various components of the waste management system (packaging, handling, transport, storage, and disposal of the waste).
- 3.5. Review the DOE's plans for addressing public safety concerns and for enhancing safety capabilities along transportation corridors. This includes activities related to development of plans (e.g., route selection), coordination, accident prevention (e.g., improved inspections and enforcement), and emergency response.

4. Objectives Related to Confirmatory Testing (Will apply only if the site recommendation is approved)

- 4.1. Monitor performance-confirmation activities, including performance-confirmation planning, undertaken by the DOE that are designed to reduce uncertainties related to repository performance.
- 4.2. Monitor performance-confirmation activities undertaken by the DOE, and evaluate the need to revise repository or waste package designs on the basis of the results of such activities.

Performance Goals for FY 2001

The Board's performance goals for FY 2001 have been developed to further the achievement of the Board's general goals and strategic objectives. Because some of the general goals and strategic objectives relate to work and activities that will be undertaken in the future, they may not have corresponding annual performance goals in any given year. For example, the following performance goals for FY 2001 relate primarily to DOE activities supporting a DOE decision on whether to recommend the Yucca Mountain site to the President, the design of a potential repository and waste package, and transportation planning.

1. Performance Goals Related to the Natural Components of the Repository System and Predicting Repository Performance

Performance Goals

- 1.1.1. Review for technical validity the technical and scientific components of the DOE site recommendation report.

- 1.1.2. Review for technical validity the technical and scientific components of the DOE site recommendation “notification document.”
- 1.1.3. Review for technical validity the technical components of the DOE site recommendation “consideration document.”
- 1.1.4. Evaluate the DOE’s use of risk assessment and quantification of uncertainty, and determine whether they are being used appropriately.
- 1.2.1. Monitor the results of flow-and-transport studies being conducted to obtain information on the potential performance of the saturated zone as a natural barrier in the repository system.
- 1.2.2. Evaluate geologic, hydrologic, and geochemical information obtained from the enhanced characterization of the repository block (ECRB) at Yucca Mountain.
- 1.2.3. Evaluate results of the fluid inclusion study.
- 1.3.1. Set priorities among and evaluate for technical validity the DOE process model reports that will be used to support a decision on site recommendation.
- 1.3.2. Determine the strengths and weaknesses the total system performance assessment (TSPA) and recommend additional measures used to strengthen the DOE’s repository safety case.
- 1.4.1. Determine the appropriateness of the “principal factors” identified by the DOE in its safety strategy.
- 1.4.2. On the basis of an evaluation of the natural processes at work at the Yucca Mountain site, recommend additional work needed to address uncertainties, paying particular attention to estimates of the rate and distribution of water seepage into the proposed repository.

Strategy for Achieving Goals

The Board will accomplish its goals by doing the following.

- Reviewing critical documents provided by the DOE and its contractors, including contractor reports, process model reports, TSPA, and the site recommendation.
- Meeting with contractor’s principal investigators on technical issues, including those related to climate change, flow and transport in the unsaturated and saturated zones, seepage, and the biosphere.
- Holding public meetings with the DOE and contractor personnel at least three times a year involving the full Board and several meetings with individual Board panels.

- Visiting and observing ongoing laboratory investigations, including facilities at Lawrence Livermore National Laboratory, Lawrence Berkeley National Laboratory, Sandia National Laboratory, and the engineered barrier test facility; observing field investigations, including the niche, alcove, and sealed ECRB studies and Busted Butte.
- Meeting with other entities carrying out research on, or providing input to, scientific and technical issues related to waste disposal, including the Nuclear Regulatory Commission and its contractors, the Southwest Research Institute, The Nye County Early Warning Drilling Program, the University of Nevada at Las Vegas project on fluid inclusions, the Environmental Protection Agency, and the State of Nevada Nuclear Waste Projects Office.

2. Performance Goals Related to the Engineered Repository System and Strategy for Achieving Performance Goals

Performance Goals

- 2.1.1. Evaluate the accuracy and completeness of the technical bases for repository and waste package designs.
- 2.1.2. Evaluate the extent to which the DOE is using the technical bases for developing repository and waste package designs.
- 2.1.3. Monitor and evaluate the DOE's progress in developing a technical basis for modified or novel design features.
- 2.2.1. Evaluate the adequacy for a site recommendation decision of corrosion studies on materials being proposed for the EBS.
- 2.3.1. Assess the integration of scientific studies with engineering designs for the repository and the waste package. In particular, monitor the results of ongoing thermal tests and evaluate DOE plans for using the test results to support models of the thermally disturbed region near the repository and to decide on spacing between emplacement drifts, degree of preclosure ventilation, and closure date.

Strategy for Achieving Goals

The Board will accomplish its goals by doing the following.

- Evaluating the technical bases for the EBS design by reviewing technical documents and databases (e.g., the controlled design assumption document and the technical database), paying particular attention to the technical bases for making and inspecting final closure welds of the waste package and methods for making drip shield sections. Meetings will be held with project personnel as necessary to obtain clarification and confirmation.

- Evaluating the technical bases for repository design by reviewing federal documents and databases, paying particular attention to design features for promoting drainage, controlling ventilation, and protecting workers in the exhaust end of the ventilation system.
- Evaluating repository and waste package designs to identify which parts (if any) of the designs do not have a technical basis.
- Evaluating the DOE's technical program to fill in the gaps. In addition, where the DOE is working on alternative design features, the Board will evaluate the technical basis of these features.
- After identifying the corrosion mechanisms most important to performance of the overall repository system, reviewing the common database (literature, laboratory, and field data) and judging the adequacy of the database for a site recommendation decision.

3. Performance Goals Related to the Waste Management System and Strategy for Achieving Performance Goals

Performance Goals

Evaluate storage cask and container designs to ascertain whether there is a sufficient technical basis for predicting potential problems that could develop during storage and that could affect the performance of the spent fuel during subsequent repository disposal.

- 3.1.1. Evaluate storage cask and container designs to ascertain whether there is a sufficient technical basis for predicting potential problems that could develop during storage and that could affect the performance of the spent fuel during subsequent repository disposal.
- 3.2.1. Evaluate the effects of "off-normal" events at the surface facility and how the events could affect the ability of the facility to receive waste shipments.
- 3.2.2. Evaluate the effects of reduced receiving capacity at the repository surface facility on the nationwide transportation system.
- 3.3.1. Examine the ability of storage casks and containers, including multipurpose canisters, to serve as disposal casks and containers in a repository.
- 3.4.1. Monitor progress by the railroad industry in implementing new technologies that would enhance the safety of spent-fuel transportation (e.g., electronic braking, wheel-bearing monitoring). Evaluate how well the DOE works with the railroad industry to design an integrated cask-rail and car-train transportation system that would ensure maximum safety and efficiency.

- 3.4.2. Review criteria for waste acceptance for storage to ensure that accepted material has been suitably characterized for subsequent disposal.
- 3.4.3. Evaluate the DOE's plans for enhancing safety capabilities along transportation corridors and review the DOE's planning and coordination activities (e.g., route selection), accident prevention activities (e.g., improved inspections and enforcement), and emergency response activities.

Strategy for Achieving Goals

The Board will accomplish its goals by doing the following.

- Meeting with the American Association of Railroads (AAR), individual railroad companies, and railroad infrastructure manufacturers to determine the current state of rail infrastructure and noting the effects of a sustained transportation campaign on the railroad industry. The Board will monitor the construction of a short-line rail line currently under construction in Minnesota as an analog to a possible rail line in Nevada from a main line to a repository at Yucca Mountain.
- Continuing to meet with the AAR to keep up to date on the work they are doing related to their performance specification for shipping radioactive waste, and meeting with AAR personnel at the AAR Technology Center in Pueblo, Colorado.
- Attending the semiannual DOE-sponsored Transportation External Coordination Working Group meetings to determine how well the DOE is working to implement Section 180 (c) of the Nuclear Waste Policy Act.
- Holding a meeting of the Board's Panel on the Waste Management System.

4. Performance Goal Related to Performance Confirmation and Strategy for Achieving the Goal

Performance Goal

- 4.1.1. Monitor the DOE's proposed performance-confirmation plans to help ensure that uncertainties identified as part of the site recommendation process are considered in the formulation of those plans.

Strategy for Achieving Goal

The Board will accomplish its goal by doing the following.

- Reviewing critical documents provided by the DOE and its contractors, including contractor reports, process model reports, TSPA, and the site recommendation.

- Reviewing performance-confirmation plans and meeting with DOE personnel to discuss aspects of the plans.

Board Operations

The Board is composed of 11 members appointed by the President who serve on a part-time basis; are eminent in a relevant field of science or engineering, including environmental sciences; and are appointed solely on the basis of distinguished service. Because of the comprehensive nature of the program and the part-time availability of the members, Congress authorized the Board to maintain a small professional staff of 10 full-time employees to support the Board's comprehensive review of the DOE program. In addition to the members and professional staff, the Board maintains a small administrative staff that supports its activities.

The full Board meets three or four times each year. The Board has organized itself into panels that meet as needed. The Board also gathers information from field trips to the Yucca Mountain site, visits to contractor laboratories and facilities, and informal meetings with individuals working on the project. The Board has gained insights from visiting other countries to learn about their nuclear waste management programs. On the basis of the information gathered throughout the year, the Board issues its findings in letters and reports.

Evaluating the Board's Performance

The Board believes that measuring its effectiveness by directly correlating improvements in the DOE program with Board actions and recommendations would be ideal. However, the Board has no implementing authority, so it cannot compel the DOE to comply with its recommendations. Consequently, a judgment about whether a specific recommendation had a positive outcome for the DOE program is, in most cases, (1) subjective and (2) an imprecise indicator of Board performance because implementation of Board recommendations by the DOE is outside the Board's direct control. Therefore, to measure its performance in a given year, the Board has developed performance measures. For each annual performance goal, the Board considers the following.

1. Were the reviews, evaluations, and other activities undertaken under the auspices of the goal completed?
2. Were the results of the reviews, evaluations, and other activities communicated in a timely, understandable, and appropriate way to Congress and the Secretary of Energy?

If both measures are met, the Board's performance in meeting the annual goal will be judged effective. If only one measure is met, the performance of the Board in achieving that goal will be judged minimally effective. Failing to meet both performance measures without sufficient and compelling explanation will result in a judgment that the Board has been ineffective in achieving that performance goal.

The Board will use its evaluation of its own performance from the current year, together with its assessment of current or potential key issues of concern related to the DOE program, to establish its

annual performance objectives and develop its budget request for subsequent years. The results of the Board's performance evaluation are included in its annual summary report.

Performance Evaluation for 2001

On the basis of the following evaluation and consistent with the performance measures described in the previous section, the Board's performance for 2001 related to site investigations and other activities undertaken by the Secretary in preparation for a decision on site recommendation was found effective. However, the Secretary's activities related to transportation and packaging of spent fuel and high-level radioactive waste were extremely limited during 2001. Therefore, the Board's performance goals related to the waste management system are deferred until the Secretary of Energy undertakes technical and scientific work in this area.

1. Performance Goals Related to the Natural Components of the Repository System and Predicting Repository Performance

1.1.1. Review for technical validity the technical and scientific components of the DOE site recommendation report.

- Evaluation of 1.1.1: The Board met in November 2001 to begin a comprehensive review of work conducted by the DOE related to a site recommendation. The Board's review included the results of the Board's ongoing review of the DOE's Yucca Mountain technical and scientific investigations since the Board's inception; an evaluation of the DOE's work on the natural and engineered components of the proposed repository system, using a list of technical questions identified by the Board; a comprehensive Board review of draft and final documents supplied by the DOE through mid-November 2001; and field observations by Board members at Yucca Mountain and related sites.

1.1.2. Review for technical validity the technical and scientific components of the DOE site recommendation "notification document."

- Evaluation of 1.1.2: All documents supplied to the Board by the DOE before the DOE's notification to the State of Nevada that the Secretary of Energy would recommend the site were reviewed by the Board (see evaluation of 1.1.1).

1.1.3. Review for technical validity the technical components of the DOE site recommendation "consideration document."

- Evaluation of 1.1.3: All documents supplied to the Board by the DOE before the DOE's notification to the State of Nevada that the Secretary of Energy would recommend the site were reviewed by the Board (see evaluation of 1.1.1).

- 1.1.4. Evaluate the DOE's use of risk assessment and quantification of uncertainty, and determine whether they are being used appropriately.
- Evaluation of 1.1.4: After conducting its comprehensive review, the Board concluded that when the DOE's technical and scientific work is taken as a whole, at this time the technical basis for the DOE's repository performance estimates is weak to moderate. The Board further found that gaps in data and basic understanding cause important uncertainties in the concepts and assumptions on which the DOE's performance estimates are now based. As part of its evaluation, the Board found that the DOE's efforts to quantify uncertainties had improved but are incomplete and recommended that the DOE implement suggestions proposed in a DOE contractor report titled *Uncertainty Analysis and Strategy*. The Board commented in letters dated March 30, 2001, and July 17, 2001, to the acting director of the Office of Civilian Radioactive Waste Management (OCRWM) on the DOE's progress in identifying and quantifying uncertainties associated with its estimates of repository performance.
- 1.2.1. Monitor the results of flow-and-transport studies being conducted to obtain information on the potential performance of the saturated zone as a natural barrier in the repository system.
- Evaluation of 1.2.1: The Board monitored the DOE's efforts and conducted an evaluation of the results of DOE studies included in *Supplemental Science and Performance Analysis* and *Technical Update Information Letter Report*.
- 1.2.2. Evaluate geologic, hydrologic, and geochemical information obtained from the ECRB at Yucca Mountain.
- Evaluation of 1.2.2: The Board heard several presentations on studies in the ECRB and commented to the DOE on specific concerns in letters to the acting director of OCRWM dated July 17, 2001, and October 17, 2001.
- 1.2.3. Evaluate results of the fluid inclusion study.
- Evaluation of 1.2.3: The results of a University of Nevada at Las Vegas fluid inclusion study, which was precipitated by a Board analysis of the hypothesis of hydrothermal upwelling, were presented and discussed at length at a meeting of the Board in Arlington, Virginia, in May 2001.
- 1.3.1. Set priorities among and evaluate for technical validity the DOE process model reports that will be used to support a decision on site recommendation.
- Evaluation of 1.3.1: The Board provided ongoing comments to the DOE on its process model reports and on its analysis model reports.
- 1.3.2. Determine the strengths and weaknesses of TSPA and recommend additional measures used to strengthen the DOE's repository safety case.

- Evaluation of 1.3.2: The Board commented extensively on TSPA, including the appropriateness and limits of the methodology, uncertainties related to lack of data and assumptions underlying performance estimates, and the need to supplement TSPA with additional lines of evidence and argument. In January 2001, Board Chairman Jared Cohon identified multiple lines of evidence to supplement TSPA in the DOE's repository safety case as one of the four essential elements of a site recommendation, from the Board's point of view. On April 13, 2001, the Board held a meeting devoted to discussing multiple lines of evidence and commented on the repository safety strategy in letters to the acting director of OCRWM dated March 30, 2001; June 11, 2001; and July 17, 2001. In May, two Board members and staff visited the Peña Blanca radionuclide transport analog site in Chihuahua, Mexico.

1.4.1. Determine the appropriateness of the "principal factors" identified by the DOE in its safety strategy

- Evaluation of 1.4.1: See evaluation of item 1.3.2.

1.4.2. On the basis of an evaluation of the natural processes at work at the Yucca Mountain site, recommend additional work needed to address uncertainties, paying particular attention to estimates of the rate and distribution of water seepage into the proposed repository.

- Evaluation of 1.4.2: The Board urged the DOE several times to reconcile results of different studies on fast water pathways and commented on infiltration studies in its July 17, 2001, letter to the acting director of OCRWM. The Board recommended to the DOE in an October 17, 2001, letter that the DOE obtain data supporting the DOE's contention that moisture discovered in the bulkheaded part of the cross drift is condensation.

2. Performance Goals Related to the Engineered Repository System and Strategy for Achieving Performance Goals

2.1.1. Evaluate the accuracy and completeness of the technical bases for repository and waste package designs.

- Evaluation of 2.1.1: In January 2001, the Board identified an evaluation and comparison of the base-case repository design with a low-temperature design as one of four essential elements of any site recommendation. During 2001, the Board evaluated DOE work related to high- and low-temperature operating modes for the DOE's flexible repository design. The Board commented to the DOE on this issue in letters to the acting director of OCRWM dated March 30, 2001; July 17, 2001; and October 17, 2001.

2.1.2. Evaluate the extent to which the DOE is using the technical bases for developing repository and waste package designs.

- Evaluation of 2.1.2: Uncertainties in the technical basis, particularly for higher-temperature designs, were identified. Because of a lack of data, the magnitude of these uncertainties cannot

be determined. As stated in the Board's January 24, 2002, letter, because of the uncertainties, the Board has limited confidence in the DOE's performance estimates for high-temperature designs.

2.1.3. Monitor and evaluate the DOE's progress in developing a technical basis for modified or novel design features.

- Evaluation of 2.1.3: The novel design aspect of highest interest to the Board is development of one or more low-temperature designs for an evaluation and a comparison with higher-temperature designs. For example, if low-temperature designs require significantly larger repository footprints, whether the additional area has been adequately characterized and represented in performance estimates will need to be addressed.

2.2.1. Evaluate the adequacy for a site recommendation decision of corrosion studies on materials being proposed for the EBS.

- Evaluation of 2.2.1: In January 2001, the Board identified progress in understanding the underlying fundamental processes involved in predicting the rate of waste package corrosion as one of four essential elements of any site recommendation. The Board monitored DOE activities and commented on the issue in letters to OCRWM's acting director dated March 30, 2001, and July 17, 2001. On July 19 and 20, 2001, the Board hosted an international workshop on issues related to the stability of the passive layer on metals proposed for the waste package and the challenges of extrapolating data obtained from short-term experiments to performance of the waste packages over thousands of years. At the workshop, experts from programs in other countries gave their views on surprises that might be encountered over the very long time periods involved.

2.3.1. Assess the integration of scientific studies with engineering designs for the repository and the waste package. In particular, monitor the results of ongoing thermal tests and evaluate DOE plans for using the test results to support models of the thermally disturbed region near the repository and to decide on spacing between emplacement drifts, degree of preclosure ventilation, and closure date.

- Evaluation of 2.3.1: In a July 17, 2001, letter to the acting director of OCRWM, the Board commented on the need to complete investigations that connect the near-field natural environment with the engineered repository system. The letter also gave an example of lack of communication among program scientists, engineers, designers and modelers related to repository design and the large hydraulic gradient.

3. Performance Goals Related to the Waste Management System

As noted above, the DOE's efforts related to the waste management system were extremely limited. Therefore, the Board's review in this area was likewise constrained. The expectation is that if the site recommendation is approved, waste management activities, including transportation plans and

studies, will become a major area of review for the Board. Therefore, waste management system performance goals have been deferred until FY 2003.

3.1.1. Evaluate storage cask and container designs to ascertain whether there is a sufficient technical basis for predicting potential problems that could develop during storage and that could affect the performance of the spent fuel during subsequent repository disposal.

- Evaluation of 3.1.1: Because of limited DOE activity in this area, Board work on this specific goal and related issues was deferred until fiscal year 2003.

3.2.1. Evaluate the effects of “off-normal” events at the surface facility and how the events could affect the ability of the facility to receive waste shipments.

- Evaluation of 3.2.1: Because of limited DOE activity in this area, Board work on this specific goal and related issues was deferred until fiscal year 2003.

3.2.2. Evaluate the effects of reduced receiving capacity at the repository surface facility on the nationwide transportation system.

- Evaluation of 3.2.2: Because of limited DOE activity in this area, Board work on this specific goal and related issues was deferred until fiscal year 2003.

3.3.1. Examine the ability of storage casks and containers, including multipurpose canisters, to serve as disposal casks and containers in a repository.

- Evaluation of 3.3.1: Because of limited DOE activity in this area, Board work on this specific goal and related issues was deferred until fiscal year 2003.

3.4.1. Monitor progress by the railroad industry in implementing new technologies that would enhance the safety of spent-fuel transportation (e.g., electronic braking, wheel-bearing monitoring). Evaluate how well the DOE works with the railroad industry to design an integrated cask-rail and car-train transportation system that would ensure maximum safety and efficiency.

- Evaluation of 3.4.1: Because of limited DOE activity in this area, Board work on this specific goal and related issues was deferred until fiscal year 2003.

3.4.2. Review criteria for waste acceptance for storage to ensure that accepted material has been suitably characterized for subsequent disposal.

- Evaluation of 3.4.2: Because of limited DOE activity in this area, Board work on this specific goal and related issues was deferred until fiscal year 2003.

3.4.3. Evaluate the DOE’s plans for enhancing safety capabilities along transportation corridors and review the DOE’s planning and coordination activities (e.g., route selection), accident

prevention activities (e.g., improved inspections and enforcement), and emergency response activities.

- Evaluation of 3.4.3: Because of limited DOE activity in this area, Board work on this specific goal and related issues was deferred until fiscal year 2003.

4. Performance Goal Related to Performance Confirmation

- 4.1.1. Monitor the DOE's proposed performance-confirmation plans to help ensure that uncertainties identified as part of the site recommendation process are considered in the formulation of those plans.
- Evaluation of 4.1.1: Several Board members and staff attended and contributed to a workshop sponsored by the Electric Power Research Institute at which representatives of the DOE, the NRC, the National Academy of Sciences, and Nye County, among others, began a preliminary discussion of the following questions: (1) What is the definition of performance confirmation? (2) How are the elements of a performance-confirmation plan selected? (3) What measurements will be used to confirm performance estimates? (4) How would the program or the repository system be modified according to the results of performance-confirmation studies? (5) How long would the performance- confirmation period continue?