

November 15, 1999

The Honorable Robert F. Bennett, Chairman
Special Committee on the Year 2000 Technology Problem
United States Senate
Washington, D.C. 20515

Dear Mr. Chairman:

I am responding to your November 1, 1999 letter in which you express concern about the lack of public confidence in the nuclear industry's Year 2000 (Y2K) readiness and request information on certain specific matters. The Commission's responses to your specific questions are provided as Enclosure 1. This letter will summarize our overall activities to assure Y2K readiness.

The Commission recognizes that Y2K issues continue to be of widespread concern as the Year 2000 approaches. The Commission is confident, however, that the potential for Y2K-related disruptions have been addressed by NRC licensees. In that regard, as of November 4, all nuclear power plants have been reported as Y2K ready by the plant licensees. This includes preparation of contingency plans for the Y2K transition. The safe operation of the nuclear power plants is expected to contribute to a stable and reliable grid during the Y2K transition.

Over the past several years, the NRC staff has worked closely with nuclear industry organizations and licensees to address Y2K issues, and the NRC continues to maintain an appropriately aggressive regulatory framework for overseeing Y2K readiness efforts at all nuclear power plants. These activities, as summarized in Enclosure 2, provide an integrated and comprehensive approach for addressing Y2K issues. Moreover, in order to assure public confidence, the NRC has kept the public informed about industry and NRC Y2K activities through numerous media releases, responses to questions by telephone, electronic mail and letters, interviews with reporters, participation at workshops and public meetings, and maintenance of current Y2K information on NRC's Web site at <http://www.nrc.gov/NRC/NEWS/year2000.html>. This Web site identifies Y2K resources and has Y2K information on all operating nuclear power plants, including press releases, periodic reports, and other related information.

Nuclear power plant licensees have developed plans for their activities immediately before and after the Y2K transition. These plans were developed based on a Y2K contingency planning guidance document created by the Nuclear Energy Institute (NEI) in August of 1998 (NEI/NUSMG 98-07, "Nuclear Utility Year 2000 Readiness Contingency Planning").

NEI/NUSMG 98-07, which was found to be acceptable by the staff, provides guidance in areas such as staffing, back-up communications, availability of supplies, and actions to be taken during the last days of 1999 and the first days of 2000.

In this connection, it should be noted that nuclear power plants have extensive emergency response plans and plant procedures to respond to events and equipment failures regardless of the initiating cause. Plant operators are trained to respond to off-normal situations, and periodic emergency response drills are conducted at all nuclear power plants. The use of these existing contingency plans or procedures for Y2K-related issues is also addressed in NEI/NUSMG 98-07. The document offers a focused approach to effective integrated contingency planning that builds on the Year 2000 readiness program and emergency response capability that nuclear utilities already have in place. The integrated contingency plan supplements existing plant procedures and is built from component and system contingency plans developed for specific risks from internal and external initiating events, as well as Y2K program insights.

In addition, the NRC staff conducted inspections of the Y2K contingency plans developed for each operating nuclear power plant as part of onsite Y2K reviews. These reviews confirmed that licensees have taken prudent and conservative measures to mitigate potential Y2K problems during the Y2K transition. Moreover, licensees have conducted drills to assure the adequacy of their planning. For example, during a July 14th NRC Y2K exercise involving Baltimore Gas and Electric, the State of Maryland and the counties surrounding the Calvert Cliffs nuclear power plant, Y2K contingency plan procedures were tested against a number of scenarios, including loss of power and loss of telecommunications. The exercise confirmed the adequacy of preparations for potential Y2K transition problems and ensured provisions were developed for dealing with them if they were to occur.

Nonetheless, despite these reviews and preparatory exercises and drills, the NRC has developed a comprehensive Y2K transition strategy as part of its own Y2K Contingency Plan in order to be able to respond to problems which may develop during the Y2K transition. The Contingency Plan encompasses augmented staffing at Headquarters and regional response centers, inspector monitoring of licensee activities during the transition period, enhanced communication capabilities, and procedures to respond to Y2K events. Moreover, on October 15, the NRC held a full-scale Y2K exercise to test its Contingency Plan. In that exercise, the NRC successfully responded to a variety of simulated Y2K problems at three fuel cycle facilities and 11 nuclear power plants, under circumstances in which a number of communication failures were also simulated. Despite overall success, improvements and specific lessons learned from this exercise are being incorporated in the NRC Contingency Plan. The Commission believes that licensee and NRC contingency plans provide assurance that the industry and NRC can respond to Y2K events, should they occur.

The NRC remains committed to its oversight of the nuclear power plant licensee Y2K-readiness efforts in order to ensure safe operation of these facilities throughout 1999, 2000, and beyond. Please contact me if you have any additional questions on this matter.

Sincerely,

/s/ Richard A. Meserve

Richard A. Meserve

Enclosures:

1. Responses to Questions
2. Summary of NRC Y2K Activities and Plant Readiness Status

November 15, 1999

The Honorable Christopher J. Dodd, Vice Chairman
Special Committee on the Year 2000 Technology Problem
United States Senate
Washington, D.C. 20510

Dear Mr. Vice Chairman:

I am responding to your November 1, 1999 letter in which you express concern about the lack of public confidence in the nuclear industry's Year 2000 (Y2K) readiness and request information on certain specific matters. The Commission's responses to your specific questions are provided as Enclosure 1. This letter will summarize our overall activities to assure Y2K readiness.

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In addition, the NRC staff conducted inspections of the Y2K contingency plans developed for each operating nuclear power plant as part of onsite Y2K reviews. These reviews confirmed that licensees have taken prudent and conservative measures to mitigate potential Y2K problems during the Y2K transition. Moreover, licensees have conducted drills to assure the adequacy of their planning. For example, during a July 14th NRC Y2K exercise involving Baltimore Gas and Electric, the State of Maryland and the counties surrounding the Calvert Cliffs nuclear power plant, Y2K contingency plan procedures were tested against a number of scenarios, including loss of power and loss of telecommunications. The exercise confirmed the adequacy of preparations for potential Y2K transition problems and ensured provisions were developed for dealing with them if they were to occur.

Nonetheless, despite these reviews and preparatory exercises and drills, the NRC has developed a comprehensive Y2K transition strategy as part of its own Y2K Contingency Plan in order to be able to respond to problems which may develop during the Y2K transition. The Contingency Plan encompasses augmented staffing at Headquarters and regional response centers, inspector monitoring of licensee activities during the transition period, enhanced communication capabilities, and procedures to respond to Y2K events. Moreover, on October 15, the NRC held a full-scale Y2K exercise to test its Contingency Plan. In that exercise, the NRC successfully responded to a variety of simulated Y2K problems at three fuel cycle facilities and 11 nuclear power plants, under circumstances in which a number of communication failures were also simulated. Despite overall success, improvements and specific lessons learned from this exercise are being incorporated in the NRC Contingency Plan. The Commission believes that licensee and NRC contingency plans provide assurance that the industry and NRC can respond to Y2K events, should they occur.

The NRC remains committed to its oversight of the nuclear power plant licensee Y2K-readiness efforts in order to ensure safe operation of these facilities throughout 1999, 2000, and beyond. Please contact me if you have any additional questions on this matter.

Sincerely,

/s/ Richard A Meserve

Richard A. Meserve

Enclosures:

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RESPONSE TO QUESTIONS

1. Provide a list of nuclear power plants and how their mission-critical systems were validated as Y2K-ready, categorized according to the following: internal quality assurance, external review, and independent validation and verification. As possible, describe the equivalence and differences in such approaches.

Answer.

NRC does not have a categorized list showing specifically how each nuclear power plant validated the Y2K readiness of mission-critical systems, conducted internal quality assurance audits, or provided external reviews. However, readiness activities have been completed at all nuclear power plants over the past two years in accordance with NEI/NUSMG 97-07, "Nuclear Utility Year 2000 Readiness." NEI/NUSMG 97-07, which was found acceptable by NRC, includes guidance regarding validation of system readiness and quality assurance measures. The completion dates for the NRC reviews of licensee Y2K activities at each nuclear power plant are listed in the Attachment to this enclosure. The staff's reviews confirmed that the licensees utilized NRC-inspected quality assurance (QA) programs and processes required by NRC regulations, while completing Y2K activities.

Y2K QA measures are an outgrowth of nuclear QA programs and processes that are in place at all nuclear reactors and that provide an independent assurance in the quality of licensee activities. Internal QA activities, external reviews and independent verification and validation all contribute to providing a high confidence in the licensee's actions to achieve Y2K readiness.

Internal QA activities consist of those activities normally performed by the licensee during plant modifications or routine maintenance activities. Licensee management reviews plant modification and maintenance activities and ensures they are conducted according to approved plant procedures and quality assurance requirements. For safety-related systems and mission-critical systems, an independent check of the plant modification or maintenance activity is conducted by another technician or engineer, depending on the activity.

External reviews of plant modifications or maintenance activities are performed by an independent group, such as the licensee's Quality Assurance Group, or a peer group from an external organization. The results and recommendations from these reviews are provided to licensee senior management as a means of improving the licensee's internal processes. For Y2K-readiness preparations, these peer group reviews were conducted by members from other licensees, industry experts, and Nuclear Energy Institute (NEI) staff. Several of these peer group audits were reviewed by the NRC in the initial 12 audits it conducted between September 1998 and February 1999 (see Enclosure 2). Specifically, in March 1999, the nuclear industry reported to the North American Electric Reliability Council (NERC) that 65 of 66 sites had at least one industry audit. (The last facility audit was completed in April 1999.) Industry audits included 56 audits by utility quality assurance departments, 36 cross-utility audits, and 46 third-party industry audits. Most facilities have conducted multiple audits, as reflected by the sum of 139 reported audits at the 66 reactor sites (which comprise all 103 operating nuclear power

Question 1. (continued)

plants). In short, all reactor sites have received at least one independent industry audit of their Y2K program.

In addition, independent verification and validation (IV&V) of software modification activities for systems and components were performed using the criteria for independence required by 10 CFR Part 50 Appendix B. IV&V is part of the licensee's normal software modification and maintenance practices for safety-related and mission-critical applications. It entails a specific degree of technical, managerial, and financial independence from the development organization.

As described in detail in Enclosure 2, NRC Y2K reviews conducted at each operating reactor site confirmed that licensees have implemented appropriate QA measures to provide a high level of confidence in their Y2K programs. The staff has concluded that sufficient independent validation has occurred in connection with licensee Y2K programs.

Attachment: NRC Y2K Nuclear Power Plant
Inspection Completion Dates

2. Provide detailed information about voluntary pledges by industry representatives to maintain a 30-45 day supply of emergency diesel generator fuel, and other voluntary measures to reduce the risk of plant failure.

Answer.

No industry representatives have pledged to NRC to maintain a 30-45 day supply of diesel fuel onsite and there are no NRC requirements for fuel supplies of this nature. However, provision for adequate fuel supply is a requirement in the plant technical specifications (TSs). This is generally a week's supply of fuel per diesel generator, based on the demands of loading under accident conditions. The TSs are intended to ensure that sufficient power will be available to supply safety-related equipment at all times. The capability of diesel generators and the adequacy of existing fuel supplies have been demonstrated at numerous plants during weather-induced interruptions of the power grid and other cases of loss of offsite power (LOOP) from the grid. An example is the Turkey Point nuclear plant LOOP event during Hurricane Andrew (August 1992) when the diesel generators automatically picked up safety-related loads and maintained the plant for an extended period (over 6 days). NRC considers the current fuel capacity requirements to be sufficient to operate diesel generators for longer than the time that it takes to replenish the onsite supply from outside sources for a postulated extended loss of offsite power.

Based on its onsite reviews, the staff is aware that many licensees are planning to take precautionary measures and have additional fuel oil onsite as part of their site-specific Y2K contingency planning efforts. Plants have addressed fuel supply requirements based upon such factors as the projected grid conditions during the critical Y2K dates and the Y2K readiness of the supplier. Typically, as part of Y2K contingency planning, licensees are planning to "top-off" supplies of consumables (such as diesel fuel, chemicals, and gases) and to confirm supply arrangements with vendors, including diesel fuel oil vendors. For economic reasons not related to Y2K, some licensees have additional onsite fuel storage that can accommodate more than a 7-day period. NRC's Y2K Contingency Plan implementing procedures provide guidance to resident inspectors to verify before the transition period that there is an adequate supply of consumables and that licensees have "topped-off" their fuel oil tanks. However, there is no formal process established to verify these actions and we do not believe one is necessary because of the requirement that licensees conform to TSs.

Consistent with NEI/NUSMG 98-07 guidelines, licensees are taking other measures to reduce plant risk during the Y2K transition. Some examples include augmented staff, walkthroughs, special monitoring of systems, establishment of supplemental communications capability (such as satellite phones), and additional communication checks with offsite support agencies. Consistent with the NRC's Y2K contingency planning and guidelines, NRC resident inspectors are expected to oversee important plant-specific contingency plan implementation activities by the licensees.

3. Provide a description of the process by which NRC will make a final determination as to which NPP, if any, will be shut down for safety concerns during the rollover period.

Answer.

Licensees are required to operate their facilities safely in compliance with NRC's regulations and the specific conditions of facility licenses. Plant Technical Specifications (TSs), which are part of the facility license, provide criteria for plant shutdown if systems or components are inoperable for any reason. This would include situations in which systems or components are inoperable due to a Y2K deficiency. If the NRC should identify a situation in which the Y2K issue results in a plant being in noncompliance with its license or NRC regulations, the NRC has the authority to issue an immediately effective order to the licensee requiring that the nuclear power plant be placed in a safe condition. This includes shutting down a plant, if warranted. The NRC is prepared to issue such an order, in the unlikely event that such action is appropriate.

In summary, the NRC's current process of monitoring licensee safety performance and conformance to its license, the TSs, and NRC regulations will enable the NRC to address any need for plant shutdowns over the rollover period. At this time, we believe that all licensees will be able to operate their plants safely during the transition from 1999 to 2000 and beyond, and we do not believe that significant plant-specific action directed by the NRC to address possible Y2K problems is likely to be needed.

4. Provide the minimal safety standards that will be acceptable under the proposed suspension of technical regulations.

Answer.

The NRC is not proposing a suspension of regulations during the Y2K transition. In fulfilling its primary responsibility to protect public health and safety, the NRC uses regulations and license conditions as the fundamental building blocks of its regulatory program. There are two classes of regulatory requirements: regulations that generally apply to all facilities, and plant-specific technical specifications (TSs) that reflect each facility's unique design features. The TSs establish minimum operating criteria for the facility, including "Limiting Conditions for Operation" (LCOs). An LCO is the lowest functional capability or performance level of a piece of equipment or a system that is required for the safe operation of the facility. When an LCO is not met, remedial action is required within a time specified in the TSs to restore compliance with the LCO.

The NRC expects all nuclear power plant licensees to operate their facilities safely in compliance with the NRC regulations and requirements, including the plant TSs. This expectation is true at all times, including during the Y2K transition period. Accordingly, the minimal acceptable safety standards during the Y2K rollover period will continue to be the same as those during any other period -- that is, full compliance with the NRC requirements and plant TSs.

Under rare circumstances -- circumstances not expected to be involved in the Y2K transition -- the NRC may allow temporary noncompliance with a TS. This situation arises because it is not possible to anticipate every contingency that might arise during the lifetime of a facility. Circumstances occasionally arise in which a licensee foresees that compliance with an NRC requirement would involve an unnecessary plant transient or startup delay, or that performance of testing, inspection, or system realignment is inappropriate under the specific plant conditions. For these rare and limited circumstances, the NRC's "General Statement of Policy and Procedures for NRC Enforcement Actions" (Enforcement Policy, NUREG-1600), permits the NRC, at its discretion, either to defer or not enforce the applicable TS. In these cases, a licensee may request that the NRC exercise its discretion to refrain from enforcing the applicable TS before a violation occurs. This type of enforcement discretion is designated as a Notice of Enforcement Discretion (NOED) and is addressed in Section VII.C of the Enforcement Policy. The NRC will take such an action and issue a NOED only when it is clearly satisfied that this is consistent with the agency's mission to protect public health and safety.

Further, in each case in which the NRC staff has chosen to issue a NOED, enforcement action will normally be taken for the root causes, to the extent violations were involved, that led to the noncompliance for which enforcement discretion was used. The enforcement action is intended to emphasize that licensees should not rely on the NRC's authority to exercise enforcement discretion as a routine substitute for compliance or for requesting a license amendment. Staff guidance for implementing the NOED policy appears in the NRC Inspection Manual Chapter Part 9900.

Question 4. (continued)

The NRC is actively working with the industry groups and licensees to assure that Y2K-related issues affecting US nuclear power plants are identified and corrected well before December 31, 1999. At this time all nuclear power plants are declared Y2K ready. Although the need should be unlikely, the NRC has developed an Interim Enforcement Policy for addressing potential Y2K-related contingencies. We recognize that, despite every reasonable effort by licensees to identify and correct Y2K computer system problems at their facilities, some software, applications, equipment, and systems may remain susceptible to Y2K problems. The Interim Enforcement Policy is a special situation of the NOED policy which is effective during the Y2K rollover and transition period. This policy was published in the Federal Register on July 30, 1999, and a copy is attached.

The exercise of enforcement discretion may support a licensee's decision to keep the plant in operation despite potential noncompliance with the license, if the licensee has determined that safety will not be unacceptably affected, in order to help maintain electrical grid stability and reliability. Accordingly, the NRC's Interim Enforcement Policy provides for granting NOEDs to allow continued operation when, despite licensees' best efforts, nuclear facilities face Y2K-related issues involving very little risk but resulting in potential noncompliance with the license and otherwise requiring shutdown. In such circumstances, the NRC will balance the overall public health and safety as a result of the facility not operating against potentially small increases in radiological risk or other hazards associated with continued operation. When the NRC determines that plant safety will not be unacceptably affected by exercising the discretion, it may grant a NOED.

The NRC will grant a NOED only when it is clearly satisfied that its action is consistent with the agency's mission to protect public health and safety. It is important to note that although the Interim Enforcement Policy is a prudent contingency measure for any unlikely Y2K-induced problems, the NRC is under no obligation to (and will not) exercise discretion merely because a licensee requests it to do so.

Attachment: Federal Register Notice

NRC Y2K Nuclear Power Plant Inspection Completion Dates

Details of inspection activity are contained in NUREG-1706, "Year 2000 Readiness in U.S. Nuclear Power Plants," dated September 1999. Program reviews consisted of evaluating licensee programs, ensuring that the Y2K remediation efforts were being completed in accordance with NRC-endorsed industry guidance, NEI/NUSMG 97-07, "Nuclear Utility Year 2000 Readiness" and NEI/NUSMG 98-07, "Nuclear Utility Year 2000 Readiness Contingency Planning." Followup reviews were completed between July 1 and August 13, 1999, at 14 plants where licensee activities were insufficiently complete at the time of the staff's program review.

In Generic Letter (GL) 98-01 NRC required licensees to report their Y2K readiness status by July 1, 1999. Licensee's that were not ready by July 1, were directed to provide their schedules for completing Y2K activities. Final reviews were only conducted at those plants which had not reported Y2K readiness on or before July 1, 1999. Cooper Nuclear Station received a final review because after having reported being Y2K ready on July 1, it discovered a potential Y2K issue that required further resolution.

| Plant Name | Program Review Completed | Follow-up Review Completed | Final Review Completed |
|--|--------------------------|----------------------------|------------------------|
| Arkansas Nuclear One, Unit 1 | 6/8/99 | 7/21/99 | |
| Arkansas Nuclear One, Unit 2 | 6/8/99 | 7/21/99 | |
| Braidwood, Unit 1 | 6/4/99 | | |
| Braidwood, Unit 2 | 6/4/99 | | |
| Beaver Valley Power Station, Unit-1 | 5/17/99 | 8/6/99 | 10/28/99 |
| Beaver Valley Power Station, Unit-2 | 5/17/99 | 8/6/99 | 10/28/99 |
| Browns Ferry Nuclear Power Station, Unit-2 | 6/14/99 | | 10/20/99 |
| Browns Ferry Nuclear Power Station, Unit-3 | 6/14/99 | | 10/20/99 |
| Brunswick Steam Electric Plant, Unit-1 | 6/16/99 | | 9/10/99 |
| Brunswick Steam Electric Plant, Unit 2 | 6/16/99 | | |
| Byron Unit 1 | 4/29/99 | | |
| Byron Unit 2 | 4/29/99 | | |
| Callaway | 5/11/99 | | |
| Calvert Cliffs, Unit 1 | 4/23/99 | | |
| Calvert Cliffs, Unit 2 | 4/23/99 | | |
| Catawba, Unit 1 | 5/26/99 | | |
| Catawba, Unit 2 | 5/26/99 | | |
| Clinton Power Station, Unit-1 | 6/4/99 | | 10/20/99 |
| Comanche Peak Steam Electric Plant, Unit-1 | 6/22/99 | | 11/3/99 |
| Comanche Peak Steam Electric Plant, Unit-2 | 6/22/99 | | 11/3/99 |
| Cooper Nuclear Station | 5/28/99 | 8/12/99 | 9/29/99 |
| Crystal River Unit 3 | 6/11/99 | | |
| Davis-Besse Nuclear Power Station | 4/26/99 | | 8/3/99 |

| Plant Name | Program Review Completed | Follow-up Review Completed | Final Review Completed |
|---|--------------------------|----------------------------|------------------------|
| Diablo Canyon Nuclear Power Plant, Unit-1 | 6/17/99 | | 9/30/99 |
| Diablo Canyon Nuclear Power Plant, Unit-2 | 6/17/99 | | 9/30/99 |
| Donald C. Cook Nuclear Plant, Unit-1 | 5/24/99 | | 11/4/99 |
| Donald C. Cook Nuclear Plant, Unit-2 | 5/24/99 | | 11/4/99 |
| Dresden Unit 2 | 6/24/99 | | |
| Dresden Unit 3 | 6/24/99 | | |
| Duane Arnold | 5/14/99 | | |
| Farley, Unit 1 | 4/17/99 | | |
| Farley, Unit 2 | 4/17/99 | | 11/4/99 |
| Fermi, Unit 2 | 5/3/99 | | |
| Fitzpatrick | 4/30/99 | | |
| Fort Calhoun | 5/13/99 | | |
| Ginna | 5/14/99 | | |
| Grand Gulf | 6/4/99 | 7/22/99 | |
| Hatch, Unit 1 | 6/7/99 | | |
| Hatch, Unit 2 | 6/7/99 | | |
| Hope Creek Nuclear Station, Unit-1 | 5/24/99 | | 11/1/99 |
| Indian Point 2 | 5/14/99 | 8/3/99 | |
| Indian Point 3 | 5/19/99 | | |
| Kewaunee | 5/28/99 | | |
| LaSalle, Unit 1 | 5/21/99 | | |
| LaSalle, Unit 2 | 5/21/99 | | |
| Limerick Generating Station, Unit 1 | 6/8/99 | | |
| Limerick Generating Station, Unit-2 | 6/8/99 | | 10/4/99 |
| McGuire, Unit 1 | 5/25/99 | | |
| McGuire, Unit 2 | 5/25/99 | | |
| Millstone, Unit 2 | 6/18/99 | | |
| Millstone, Unit 3 | 6/18/99 | | |
| Monticello | 6/8/99 | | 8/3/99 |
| Nine Mile Point, Unit 1 | 6/4/99 | | |
| Nine Mile Point, Unit 2 | 6/4/99 | | |
| North Anna Power Station, Unit-1 | 6/11/99 | | |
| North Anna Power Station, Unit-2 | 6/11/99 | | 9/13/99 |
| Oconee, Unit 1 | 6/8/99 | | |
| Oconee, Unit 2 | 6/8/99 | | |
| Oconee, Unit 3 | 6/8/99 | | |
| Dyster Creek Nuclear Generating Station | 6/11/99 | | 10/4/99 |
| Palisades | 5/5/99 | | |
| Palo Verde, Unit 1 | 6/10/99 | | |

| Plant Name | Program Review Completed | Follow-up Review Completed | Final Review Completed |
|---|--------------------------|----------------------------|------------------------|
| Palo Verde, Unit 2 | 6/10/99 | | |
| Palo Verde, Unit 3 | 6/10/99 | | |
| Peach Bottom Atomic Power Station, Unit-2 | 5/28/99 | | 10/20/99 |
| Peach Bottom Atomic Power Station, Unit-3 | 5/28/99 | | 11/1/99 |
| Perry Nuclear Power Plant | 5/28/99 | | 8/3/99 |
| Pilgrim | 5/28/99 | | |
| Point Beach, Unit 1 | 6/24/99 | | |
| Point Beach, Unit 2 | 6/24/99 | | |
| Prairie Island, Unit 1 | 5/5/99 | 7/29/99 | |
| Prairie Island, Unit 2 | 5/5/99 | 7/29/99 | |
| Quad Cities, Unit 1 | 6/8/99 | | |
| Quad Cities, Unit 2 | 6/8/99 | | |
| River Bend | 5/12/99 | 8/6/99 | |
| Robinson | 5/23/99 | | |
| Salem Nuclear Generating Station, Unit-1 | 5/25/99 | | 10/19/99 |
| Salem Nuclear Generating Station, Unit-2 | 5/25/99 | | 10/19/99 |
| San Onofre, Unit 2 | 6/10/99 | | |
| San Onofre, Unit 3 | 6/10/99 | | |
| Seabrook | 5/27/99 | | |
| Sequoyah Nuclear Plant, Unit-1 | 5/27/99 | | 10/20/99 |
| Sequoyah Nuclear Plant, Unit-2 | 5/27/99 | | 10/20/99 |
| Shearon Harris | 4/15/99 | | |
| STP Electric Generating Station, Unit-1 | 6/11/99 | | 10/22/99 |
| STP Electric Generating Station, Unit-2 | 6/11/99 | | 10/22/99 |
| St. Lucie, Unit-1 | 6/24/99 | | 8/11/99 |
| St. Lucie, Unit-2 | 6/24/99 | | 8/11/99 |
| Summer | 5/10/99 | 7/27/99 | |
| Surry, Unit 1 | 6/11/99 | | |
| Surry, Unit 2 | 6/11/99 | | |
| Susquehanna, Unit 1 | 5/10/99 | | |
| Susquehanna, Unit 2 | 5/10/99 | | |
| Three Mile Island Nuclear Station, Unit-1 | 6/4/99 | 8/6/99 | 10/26/99 |
| Turkey Point, Unit-3 | 5/20/99 | | 7/30/99 |
| Turkey Point, Unit-4 | 5/20/99 | | 7/30/99 |
| Vermont Yankee Nuclear Power Station | 5/14/99 | 8/11/99 | 10/4/99 |
| Vogtle, Unit 1 | 5/13/99 | | |
| Vogtle, Unit 2 | 5/13/99 | | |
| Washington Nuclear Plant, Unit 2 | 6/11/99 | | |
| Waterford 3 | 5/14/99 | 7/24/99 | |

| Plant Name | Program Review Completed | Follow-up Review Completed | Final Review Completed |
|-------------------------------|--------------------------|----------------------------|------------------------|
| Watts Bar Nuclear Power Plant | 5/25/99 | | 10/20/99 |
| Wolf Creek | 6/9/99 | | |

Y2K Enforcement Discretion Federal Register Notice Dated July 30, 1999
(Volume 64, Number 146)

NUCLEAR REGULATORY COMMISSION
[NUREG-1600, Revision 1]
Policy and Procedure for NRC Enforcement Actions; Interim Enforcement Policy
Regarding Enforcement Discretion for Nuclear Power Plants
During the Year 2000 Transition

AGENCY: Nuclear Regulatory Commission.

ACTION: Policy statement; amendment.

SUMMARY: The Nuclear Regulatory Commission (NRC) is amending its "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, Revision 1 (Enforcement Policy), by adding Appendix E. This amendment adds an interim enforcement policy that the NRC will follow to exercise enforcement discretion for noncompliance with license conditions, including technical specifications (TSs), because of year 2000 (Y2K) related situations.

DATES: This action is effective August 30, 1999. Comments on this revision should be submitted within 30 days of publication in the Federal Register and will be considered by the NRC prior to the next Enforcement Policy revision.

ADDRESSES: Submit written comments to David L. Meyer, Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, Mail Stop T-6 D59, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Hand deliver comments to 11555 Rockville Pike, Rockville, Maryland, between 7:30 a.m. and 4:15 p.m., Federal workdays. Copies of comments received may be examined at the NRC Public Document Room, 2120 L Street, NW, (Lower Level), Washington, DC.

FOR FURTHER INFORMATION CONTACT: Richard Wessman, Deputy Director, Division of Engineering, 301-415-3298, or Allen Hansen, Lead Project Manager, Division of Licensing Project Management, 301-415-1390, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001.

SUPPLEMENTARY INFORMATION:

Background

Y2K-related events arise from a date-related problem that is experienced by a software system, a software application, or a digital device at a key rollover date when the system, application, or device does not perform its intended function. The key rollover dates are January 1, 2000; February 29, 2000 (an uncommon leap day); and December 31, 2000 (the 366th day of an uncommon leap year). The nuclear utility industry is engaged in Y2K readiness programs at all nuclear power plant facilities to seek out and correct Y2K-related problems that have any potential to adversely affect facility operations.

Y2K concerns result from licensees' reliance upon

- (1) Software to schedule maintenance and technical specification surveillances;
- (2) Programmable logic controllers and other commercial off-the-shelf software and hardware;
- (3) Digital process control systems;
- (4) Software to support facility operation;
- (5) Digital systems for collection of operating data; and
- (6) Digital systems to monitor post-accident plant conditions.

It is recognized that in spite of every reasonable effort by licensees to identify and correct Y2K computer system problems at their facilities, some software, applications, equipment, and systems may remain susceptible to the problem. Additionally, software, data, and systems external to the facility could adversely affect the facility (for example, interruption of communications or partial loss of offsite power).

The electricity production and delivery systems, as two of the more important elements of the North American economic and social infrastructure, must remain dependable during Y2K transition or rollover periods. Most other critical elements of the infrastructure depend on the availability of an interconnected, stable, and reliable supply of electrical power. There is no doubt that cascading or even localized outages of generators and transmission facilities could have serious short-term and long-term consequences.

Continued safe operation of nuclear power plants during Y2K transition or rollover periods will play a major role in maintaining stable and reliable electrical power supply systems, providing necessary reserve power if there are major losses at other generating facilities. The NRC staff is issuing interim guidance on the process for the NRC to exercise enforcement discretion in certain situations where power reactor licensees encounter Y2K-associated compliance problems in the Y2K transition period (December 31, 1999, through the first few days of 2000) or in other key rollover periods. The exercise of enforcement discretion may support a licensee decision to keep the plant in operation, if the licensee has determined that safety will not be unacceptably affected, in order to help maintain electrical grid stability and reliability. The NRC Headquarters Operations Center and the NRC Region IV Incident Response Center will have staff augmented during the key transition from December 31, 1999, to January 1, 2000, to ensure that appropriate actions can be taken for any regulatory issues that arise.

Scope

This interim enforcement policy provides for the exercise of enforcement discretion to address noncompliance with license conditions, including TSs, because of Y2K transition or rollover issues. The interim enforcement policy applies to situations in which plant operation is needed to help maintain the stability and reliability of the electrical power supply system, even when license conditions, including TSs, would require a plant shutdown. If such situations occur, licensees are expected to follow the existing guidance in NRC Inspection Manual Part 9900 for Notices of Enforcement Discretion <<http://www.nrc.gov/NRC/IM/noed.html>> to the maximum

extent practicable, particularly regarding a safety determination and notification of NRC. Licensees may decide to continue operations upon making a determination that it is safe and prudent to do so to help maintain electrical grid stability and reliability, and when certain criteria are met. This enforcement discretion does not extend to situations in which the licensee may be unable to communicate with the NRC. (The staff assessment of telecommunications capability indicates that a loss of all telecommunications between NRC and licensees is highly unlikely.)

To the extent noncompliance was involved, the NRC staff will normally take enforcement action for the root causes that led to the noncompliance for which enforcement discretion was used. Enforcement action will also be considered in those cases in which incorrect or incomplete information was provided to the NRC staff by a licensee in its justification. The NRC recognizes that a licensee will need to exercise judgement in making a determination under this discretion provision. Consistent with the NRC's position involving 10 CFR 50.54(x), enforcement action for a violation of a license condition, including a TS, will not be taken unless a licensee's action was clearly unreasonable considering all the relevant circumstances. Enforcement action could include the assessment of civil penalties and the issuance of orders.

Paperwork Reduction Act Statement

This interim policy statement does not contain a new or amended information collection requirement subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget, approval number 3150-0136.

Public Protection Notification

If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

The NRC is revising the NRC Enforcement Policy by adding Appendix E to read as follows:

GENERAL STATEMENT OF POLICY AND PROCEDURE FOR NRC ENFORCEMENT ACTIONS

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Appendix E: Interim Enforcement Policy Regarding Enforcement Discretion for Nuclear Power Plants During the Year 2000 Transition

This appendix sets forth the interim enforcement policy that will govern the exercise of enforcement discretion by the NRC staff when licensees of operating nuclear power plants find it necessary to deviate from license conditions, including technical specifications (TSs), in those cases in which year 2000 (Y2K) related complications would otherwise require a plant shutdown that could adversely affect the stability and reliability of the electrical power grid. This policy does not extend to situations in which a licensee may be unable to communicate with the NRC.

The policy is effective August 30, 1999, and will remain in effect through January 1, 2001. This policy only applies during Y2K transition or rollover periods (December 31, 1999, through January 3, 2000; February 28, 2000, through March 1, 2000; and December 30, 2000, through January 1, 2001). During these periods, a licensee may contact the NRC Headquarters

Operations Center and seek NRC enforcement discretion with regard to the potential noncompliance with license conditions, including TSs, if the licensee has determined that:

- (a) Complying with license conditions, including TSs, in a Y2K-related situation would require a plant shutdown;
- (b) Continued plant operation is needed to help maintain a reliable and stable grid; and
- (c) Any decrease in safety as a result of continued plant operation is small (considering both risk and deterministic aspects), and reasonable assurance of public health and safety, the environment, and security is maintained with the enforcement discretion.

Licensees are expected to follow the existing guidance as stated in NRC Inspection Manual Part 9900 for Notices of Enforcement Discretion to the maximum extent practicable, particularly regarding a safety determination and notification of NRC. A licensee seeking NRC enforcement discretion must provide a written justification, or in circumstances in which good cause is shown, an oral justification followed as soon as possible by written justification. The justification must document the need and safety basis for the request and provide whatever other information the NRC staff needs to make a decision regarding whether the exercise of discretion is appropriate. The NRC staff may grant enforcement discretion on the basis of balancing the public health and safety or common defense and security of not operating against potential radiological or other hazards associated with continued operation, and a determination that safety will not be unacceptably affected by exercising the discretion. The Director of the Office of Nuclear Reactor Regulation, or designee, will advise the licensee whether the NRC has approved the licensee's request and, if so, will subsequently confirm the exercise of discretion in writing. Enforcement discretion will only be exercised if the NRC staff is clearly satisfied that the action is consistent with protecting public health and safety and is warranted in the circumstances presented by the licensee.

If the volume of requests to the NRC Headquarters Operations Center is such that the NRC staff cannot review and approve all licensee requests in a timely fashion, the NRC staff will obtain the safety-significant information from the licensee to enable the NRC staff to make a prompt initial assessment. Unless the assessment is unfavorable, the licensee would be permitted to proceed with its planned course of action. The NRC staff will complete these assessments as time permits and the licensee will be advised of the results orally, if possible, and then in writing. If the NRC staff's prompt initial assessment or subsequent assessment determines that a licensee's actions raise safety concerns, the licensee would be so informed. The licensee would then be required to follow its license conditions, including TSs.

If there are communications difficulties between the licensee and the NRC, the licensee is encouraged to interact with the NRC inspector onsite who will have a dedicated satellite telephone. The inspector should be able to facilitate communication with the NRC Headquarters Operations Center and/or the NRC Regional Incident Response Centers (IRCs). If communication with the NRC Headquarters Operations Center is not possible, then the licensee should contact the IRC in NRC Region IV to discuss enforcement discretion. Similarly, if the Region IV IRC cannot be reached, then the licensee should attempt to contact the Region I, II and III IRCs. Although it is considered highly unlikely, if communication with NRC is not possible, the licensee should follow the plant license conditions, including technical specifications.

In conducting its assessments, the licensee should follow, to the extent practicable, the guidance in NRC Inspection Manual Part 9900 for Notices of Enforcement Discretion. Contrary to Part 9900 Section B.3 guidance, it is not necessary for an emergency to be declared by a government entity. Licensees are encouraged to contact NRC early in their evaluation process, particularly if time is of the essence, even though complete information as specified in Part 9900 may not be available.

The decision to exercise enforcement discretion does not change the fact that the licensee will be in noncompliance nor does it imply that enforcement discretion is being exercised for any noncompliance that may have led to the noncompliance at issue. To the extent noncompliance was involved, the NRC staff will normally take enforcement action for the root causes that led to the noncompliance for which enforcement discretion was granted. Enforcement action will also be considered in those cases in which incorrect or incomplete information was provided to the NRC staff by a licensee in its justification. The NRC recognizes that a licensee will need to exercise judgement in making a determination under this discretion provision. Consistent with the NRC's position involving 10 CFR 50.54(x), enforcement action for a violation of a license condition, including a TS, will not be taken unless a licensee's action was clearly unreasonable considering all the relevant circumstances. Enforcement action could include assessment of civil penalties and the issuance of orders.

Dated at Rockville, Maryland, this 26th day of July, 1999.

For the Nuclear Regulatory Commission.

/s/

Annette Vietti-Cook,
Secretary of the Commission.

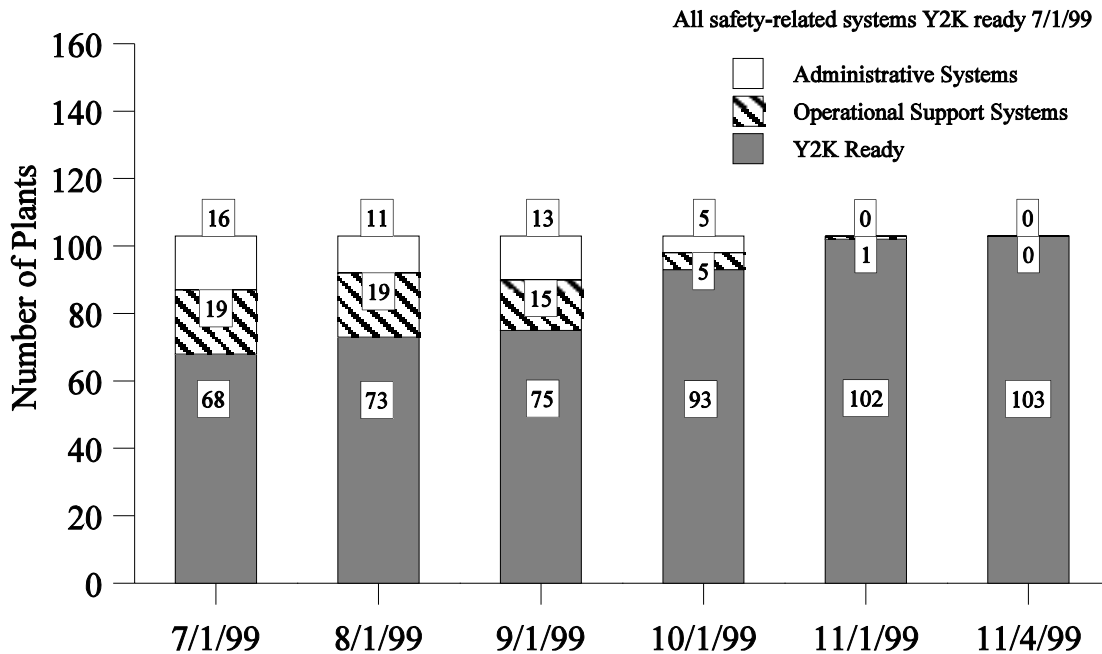
SUMMARY OF NRC Y2K ACTIVITIES AND PLANT READINESS STATUS

Since 1996, the NRC has worked with nuclear power plant licensees and the Nuclear Energy Institute (NEI), an industry organization, to assure plant systems are "Y2K ready" before the Year 2000. To ensure that potential Y2K issues are identified and corrected, the NRC issued Information Notice (IN) 96-70, "Year 2000 Effect on Computer System Software," December 24, 1996; Generic Letter (GL) 98-01, "Year 2000 Readiness of Computer Systems at Nuclear Power Plants," May 11, 1998; and GL 98-01, Supplement 1, "Year 2000 Readiness of Computer Systems at Nuclear Power Plants," January 14, 1999. IN 96-70 informed all licensees of the potential problems that nuclear facility computer systems and software might encounter during the transition to the new century. In GL 98-01 reference is made to Nuclear Energy Institute/Nuclear Utilities Software Management Group (NEI/NUSMG) 97-07, "Nuclear Utility Year 2000 Readiness," which describes an approach that all licensees have agreed to utilize in addressing the Y2K issues at their facilities. In GL 98-01 the NRC accepted the NEI/NUSMG 97-07 guidance as an appropriate program for nuclear power plant readiness and required that all operating U.S. nuclear power plant licensees submit written responses regarding their facility-specific Y2K readiness by July 1, 1999. Licensees that were not ready were requested to provide their schedule for completing their Y2K activities. Supplement 1 to GL 98-01 expanded the scope of the reporting requirements to include the systems that are necessary for continued plant operation and that are not covered by the terms and conditions of the plant's license and NRC regulations.

By July 1, 1999, licensees for all 103 operating nuclear power plants reported the status of their Y2K readiness to the NRC. Regarding NRC's highest priority—the uninterrupted performance of plant safety systems—all nuclear power plants reported that their efforts were complete and that no remaining Y2K-related problems existed that could directly affect the performance of safety systems or the capability for safe shutdown. Sixty-eight of these plants had also completed the next order of priority as of July 1, stating that all of their computer systems that support plant operation were "Y2K ready." The remaining 35 plants reported that, to be fully Y2K ready, they still had additional work to complete on a few non-safety computer systems or devices. Typically, the remaining Y2K work was awaiting a scheduled plant outage or the delivery of a replacement component. In each case, the licensees with work remaining submitted schedules for completing that work. Final reviews were performed at the 35 plants, as well as at Cooper Nuclear Station. Cooper received a final review because, after having reported being Y2K ready on July 1, it discovered a potential Y2K issue that required further resolution.

As of November 4, 1999, the NRC received Y2K readiness status reports from licensees indicating that all 103 nuclear power plants are fully Y2K ready -- that is, all plant systems involved with safety, power generation, and plant support are now ready to roll over into the Year 2000 without computer problems. The following chart illustrates plant readiness.

Nuclear Power Plant Y2K Readiness



One of a number of initiatives undertaken by the NRC staff to verify and assess the effectiveness of licensee Y2K readiness programs was the conduct of the following 12 sample audits of licensee Y2K readiness programs:

| <u>DATE</u> | <u>PLANT</u> | <u>LOCATION</u> |
|----------------|--------------|-----------------|
| September 1998 | Monticello | Minnesota |
| | Seabrook | New Hampshire |
| October 1998 | Brunswick | North Carolina |
| | Hope Creek | New Jersey |
| | Davis Besse | Ohio |
| November 1998 | Wolf Creek | Kansas |
| | Watts Bar | Tennessee |
| | Limerick | Pennsylvania |
| December 1998 | Waterford | Louisiana |
| January 1999 | Braidwood | Illinois |
| | WNP-2 | Washington |
| | North Anna | Virginia |

The NRC staff determined that this approach was an appropriate means of oversight of licensee Y2K readiness efforts because all licensees had committed to the nuclear power industry Y2K readiness guidance (NEI/NUSMG 97-07) in their first response to NRC GL 98-01 and because the NRC staff had not found any Y2K problems in safety-related actuation systems. The sample of 12 licensees included large utilities, such as Commonwealth Edison and Tennessee Valley Authority,

as well as small single-unit licensees, such as North Atlantic Energy (Seabrook) and Wolf Creek Nuclear Operating Corporation. Because licensee Y2K programs are corporate-wide, many of the NRC staff audits encompassed more than a single nuclear power plant site because many utilities own more than one nuclear power plant. In all, 42 of 103 operating nuclear power plant units were associated with the Y2K readiness program audits of 12 utilities. The NRC staff also selected a variety of types of plants of different ages and locations in this sample in order to obtain the necessary assurance that nuclear power industry Y2K readiness programs were being effectively implemented and that licensees would be on schedule to meet the readiness target date of July 1, 1999, established in GL 98-01. In late January 1999, the NRC staff completed the 12 audits. On the basis of the audit findings, the staff concluded that the audited licensees were in the process of effectively addressing Y2K issues and were undertaking the actions necessary to achieve Y2K readiness in accordance with the GL 98-01 target date. These findings were consistent with those reported by the Department of Energy in a report prepared by the North American Electric Reliability Council on the status of Y2K readiness of the electric power grid.

In an effort to verify and assess the effectiveness of licensee contingency planning, in May and June 1999, NRC audit teams conducted additional comprehensive audits focused on the area of Y2K contingency planning at the following six sites:

Diablo Canyon 1 & 2
Indian Point 2
Palo Verde 1, 2, & 3

Duane Arnold
Oconee 1, 2, & 3
Turkey Point 3 & 4

The auditors reviewed internal facility risks, external risks, individual component/system contingency planning, and integrated contingency planning against industry guidelines of NEI/NUSMG 98-07, "Nuclear Utility Year 2000 Readiness Contingency Planning." As indicated in our audit reports, all six of these plants are acceptably implementing the staff-approved industry guidelines.

In addition to the NRC staff activities previously mentioned, regional NRC inspectors reviewed plant-specific Y2K program implementation and contingency activities at all nuclear power plant facilities. The inspectors used guidance (Temporary Instruction [TI] 2515/141) prepared by the NRC headquarters staff that conducted the 12 sample audits and the 6 contingency planning audits. On the basis of the reviews, the staff found that licensees were implementing Y2K programs in accordance with staff-approved industry guidelines.

In September 1999, the NRC issued NUREG-1706, "Year 2000 Readiness in U.S. Nuclear Power Plants," to present the results of the NRC-conducted onsite reviews of licensee Y2K programs at the 103 nuclear power plants, additional staff assessment of followup reviews of 14 plants, and updated information relating to plant-specific reviews.

After receipt of the July readiness reports and schedules the NRC monitored progress at those plants that still had remaining work to be performed so as to provide independent verification of the completion of remaining items, including Y2K contingency plans that specify procedures for dealing with unexpected events. As stated in NRC Press Release No. 99-168, the staff developed guidance for appropriate regulatory actions to be taken for those facilities that were not Y2K ready by July 1, 1999. As stated in a later press release (No. 99-207) dated September 28, 1999, the NRC sent letters to those utilities with nuclear power plants that were scheduled to be Y2K ready after September 30, 1999, to verify the status of readiness and the dates when plants will be fully Y2K ready. (As noted above, all of these plants are now Y2K ready.)

Since September 1998, the staff has provided periodic status reports to the Commission and the public (via the NRC website) describing its efforts in this area and the progress of nuclear power plant licensees on addressing the Y2K issue.

NRC will continue to oversee the Y2K issue relating to nuclear power plants for the rest of this year and beyond. We believe that all licensees will be able to operate their plants safely during the transition from 1999 to 2000 and beyond, and we do not believe that significant plant-specific action directed by the NRC to address possible Y2K problems is likely to be needed. The NRC remains committed to its oversight of the nuclear power plant licensee Y2K readiness efforts in order to ensure safe operation of these facilities.