UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 20, 1999

The Honorable Don Young
Member, United States
House of Representatives
222 West 7th Avenue, #3
Anchorage, Alaska 99513-7595

Dear Congressman Young.

I am responding to the letter you sent to Dennis K. Rathbun of the U. S. Nuclear Regulatory Commission (NRC) on September 16, 1999, in which you requested information on concerns raised by one of your constituents, Mr. Ed Mayer, regarding the Year 2000 (Y2K) readiness of the U.S. nuclear power plants.

By way of background information, I am pleased to tell you that over the past several years, the NRC staff has been working with its licensees to ensure that potential Y2K issues have been identified and corrected in order for plants to function properly during the Y2K transition. The NRC has 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. This guidance document (NEI/NUSMG 97-07) came out of a joint effort between NEI and NUSMG. 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 programs. Licensees were required to report their Y2K readiness status 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.

The NRC has received reports that all 103 operating nuclear power plants (units) have no Y2K-related problems that directly affect the performance of safety systems. As of September 30, 1999, licensees for 93 of these plants indicated that all of their computer systems that support plant operation are Y2K ready. Licensees for the remaining 10 plants reported that they have additional work to complete on a few nonsafety computer systems or devices to be fully Y2K ready and provided their schedules for completing the work. Of the 10 plants, about 5 need work on operational support systems, or systems needed to support power generation. Other plants need work on plant monitoring and administrative systems, or systems needed to

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SUBJECT: Y2K-CONCERNS (CONGRESSMAN DON YOUNG)

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JVogelwede	T-6F15
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THiltz	O-16E15
SBurns	O-15D21
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SCollins	O-5E7
BSheron	O-5E7
NOlson, ADIP	O-5E7
JStrosnider	O-7D26
RWessman	O-7D26
JCalvo	O-8H2
JMauck	O-9D4
MChiramal	O-9D4
MGareri	O-9D4
BMarcus	O-9D4
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PLohaus, OSP	O-3C10
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JCrutchley (GT 19990490, EIB #99-35)	O-8H2

need to wait for a plant outage scheduled in the fall in order to perform the work or the necessity of waiting for delivery of a replacement component. None of the remaining work affects the ability of a plant to shut down safely, if necessary.

One of a number of initiatives undertaken by the NRC staff to address the Y2K issue was the conduct of 12 sample audits of licensee Y2K readiness programs. 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 identified 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 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 are 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.

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 6 unaudited plants. The audits reviewed internal facility risks, external risks, individual component/system contingency planning, and integrated contingency planning. The results of these audits, as well as the results of the 12 sample audits, are available at NRC's Public Document Rooms and can also be found on the NRC's Y2K Web site, <http://www.nrc.gov/NRC/NEWS/year2000.html>.

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 prepared by the NRC Headquarters staff who 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. Additional details regarding NRC reviews and licensee readiness are contained in NUREG-1706, "Year 2000 Readiness in U.S. Nuclear Power Plants," a copy of which is enclosed for your review.

Mr. Mayer wanted to know whether power outages would occur if the Nation's reactors are shut down 30 days before January 1, 2000, to give reactors time to cool down. On the basis of the NRC's audits, reviews, and licensee reports, the staff believes that none of the 103 operating nuclear power plants will have Y2K-related problems that directly affect the performance of safety systems and components necessary for plant operation. Therefore, the NRC is not planning to require licensees to shut down nuclear power plants. Nuclear power plant licensees are interacting with the North American Electric Reliability Council (NERC) to develop electrical

safety systems and components necessary for plant operation. Therefore, the NRC is not planning to require licensees to shut down nuclear power plants. Nuclear power plant licensees are interacting with the North American Electric Reliability Council (NERC) to develop electrical grid stability plans for generation and transmission. In this regard and based on the state of readiness from the activities discussed above, we have concluded that operation of nuclear facilities through the transition to the year 2000 is the prudent course of action. In its report to the Department of Energy, "Preparing the Electric Power Systems of North America for Transition to the Year 2000," dated August 3, 1999, NERC makes the following statement: "The current industry status leads to high confidence that nuclear generation plants will continue to reliably deliver their share of the nation's electricity needs well into the next century."

The NRC will continue to monitor progress at those plants that have remaining work to be performed and will independently verify completion of these items, including Y2K contingency plans that specify procedures for dealing with unexpected events. The staff has developed guidance for appropriate regulatory actions to be taken for those facilities that were not Y2K ready by July 1, 1999. As stated in the enclosed press release, the NRC has 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 the plants will be fully Y2K ready. However, two of these plants (South Texas Project Units 1 and 2) achieved readiness before September 30. 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.

Additional Y2K information on all operating nuclear power plants is available at NRC's Y2K Web site at <http://www.nrc.gov/NRC/NEWS/year2000.html>. This Web site also identifies Y2K resources, notices, conferences, and other related information.

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,

Original signed by
Frank [illegible]

William D. Travers
Executive Director
for Operations

Enclosures: 1. NUREG-1706, "Year 2000 Readiness in U.S. Nuclear Power Plants"
2. Press Release No. 99-207, "NRC Sends Letters to Utilities To Follow Up Y2K Readiness at Nuclear Power Plants"

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The NRC will continue to monitor progress at those plants that have remaining work to be performed and will independently verify completion of these items, including Y2K contingency plans that specify procedures for dealing with unexpected events. The staff has developed guidance for appropriate regulatory actions to be taken for those facilities that were not Y2K ready by July 1, 1999. As stated in the enclosed press release, the NRC has 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 the plants will be fully Y2K ready. However, two of these plants (South Texas Project Units 1 and 2) achieved readiness before September 30. 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.

Additional Y2K information on all operating nuclear power plants is available at NRC's Y2K Web site at <http://www.nrc.gov/NRC/NEWS/year2000.html>. This Web site also identifies Y2K resources, notices, conferences, and other related information.

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.

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Nuclear power plant licensees are interacting with the North American Electric Reliability Council (NERC) to develop electrical grid stability plans for generation and transmission. Licensees have identified grid instability as a factor to be included under external risk as part of the Y2K contingency planning effort. The industry and the NRC recognize the national importance of having available the broadest range of electrical generating capability in order to cope with any unforseen Y2K impacts if they occur. However, in its report to the Department of Energy, "Preparing the Electric Power Systems of North America for Transition to the Year 2000," dated August 3, 1999, NERC makes the following statement: "The current industry status leads to high confidence that nuclear generation plants will continue to reliably deliver their share of the nation's electricity needs well into the next century."

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Additional Y2K information on all operating nuclear power plants is available at NRC's Y2K Web site at <http://www.nrc.gov/NRC/NEWS/year2000.html>. This Web site also identifies Y2K resources, notices, conferences, and other related information.

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.

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The NRC will continue to monitor progress at those plants that have remaining work to be performed and will independently verify completion of these items, including Y2K contingency plans that specify procedures for dealing with unexpected events. The staff has developed guidance for appropriate regulatory actions to be taken for those facilities that were not Y2K ready by July 1, 1999. As stated in the enclosed press release, the NRC has 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 the plants will be fully Y2K ready. However, two of these plants (South Texas Project Units 1 and 2) achieved readiness before September 30. 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.

Additional Y2K information on all operating nuclear power plants is available at NRC's Y2K Web site at <http://www.nrc.gov/NRC/NEWS/year2000.html>. This Web site also identifies Y2K resources, notices, conferences, and other related information.

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.

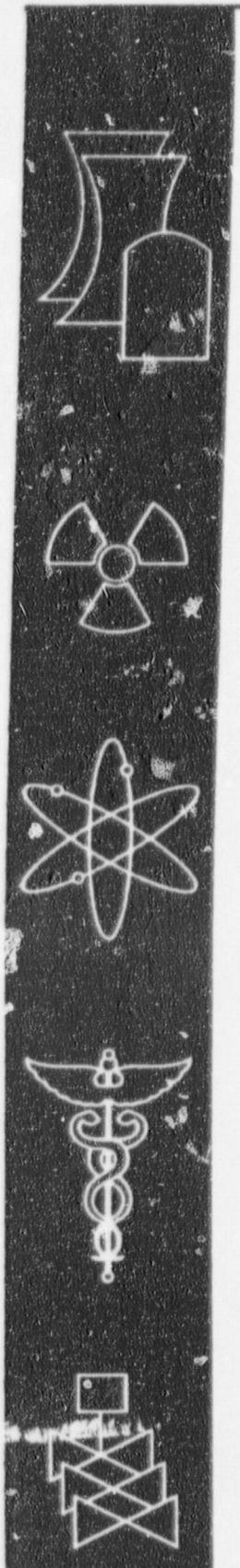
Sincerely,

Frank J. Miraglia

for William D. Travers
Executive Director
for Operations

Enclosures:
1. NUREG-1706, "Year 2000 Readiness in U.S. Nuclear Power Plants"
2. Press Release No. 99-207, "NRC Sends Letters to Utilities To Follow Up Y2K Readiness at Nuclear Power Plants"

NUREG-1706



Year 2000 Readiness in U.S. Nuclear Power Plants

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, DC 20555-0001

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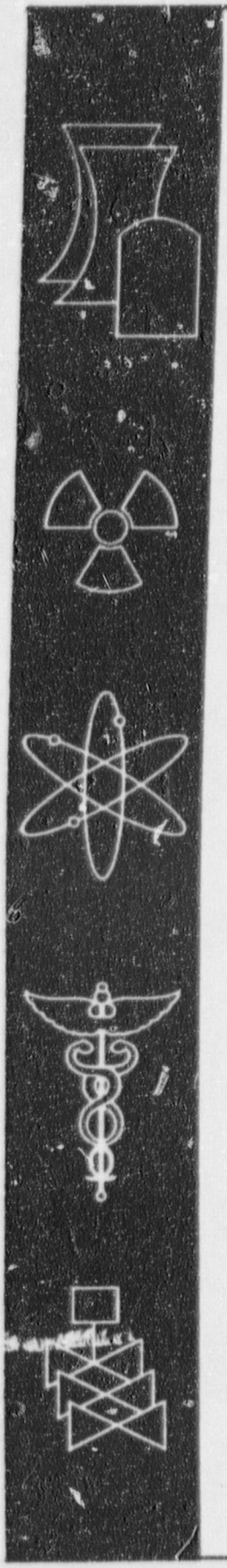

Year 2000 Readiness in U.S. Nuclear Power Plants

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, DC 20555-0001

NUREG-1706

Year 2000 Readiness in U.S. Nuclear Power Plants

Manuscript Completed: September 1999
Date Published: September 1999

Prepared by
M.E. Waterman, D.W. Spaulding

Division of Engineering
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ABSTRACT

The NRC staff has assessed the year 2000 (Y2K) readiness activities of its nuclear power plant licensees. The staff then integrated those findings with the July 1, 1999, licensee responses to Generic Letter (GL) 98-01, Supplement 1, "Year 2000 Readiness of Computer Systems at Nuclear Power Plants," and licensee followup reports on Y2K readiness. All licensees of NPPs reported in response to GL 98-01, Supplement 1, that there are no Y2K-related problems that directly affect the performance of safety systems. The Nuclear Regulatory Commission has confirmed by onsite reviews that at all 103 U.S. nuclear power plants there are no Y2K-related problems that affect the performance of safety systems needed to safely shut down the plants. As of September 1, 1999, the staff finds that licensees of 75 of the 103 plants have completed all activities to ensure computer systems and digital embedded components that support plant operations are "Y2K ready." Licensees of the remaining 28 plants have additional work to complete on a few non-safety-related systems or components that support plant operations and administrative functions. These licensees submitted dates for completing Y2K readiness at their plants. The staff will verify completion of the remaining Y2K items at each of these 28 plants. Typically, the licensee is completing the remaining Y2K work after July 1, 1999, because the work requires a plant outage scheduled for the fall of 1999 or because the licensee is waiting for delivery of a replacement component. All plants are expected to be Y2K ready by December 16, 1999. The staff does not anticipate directing any plant-specific regulatory actions.

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EXECUTIVE SUMMARY

This report provides the status of nuclear power plant (NPP) Year 2000 (Y2K) readiness as of September 1, 1999, and describes NRC's determination of Y2K readiness in operating U.S. NPPs. The staff assessment of Y2K readiness consisted of independently evaluating NPP licensee Y2K readiness program processes, reviewing licensee responses to NRC requests for reporting Y2K readiness, and combining the results on these assessments to achieve assurance that each NPP will operate safely during the transition from 1999 to 2000 and on other Y2K-sensitive dates.

The Y2K computer problem pertains to the potential for date-related problems that may occur in a software system or an embedded digital component. Among these problems are not representing the year accurately, not recognizing leap years, and erroneous date-based or time-based calculations. An example of a date-related problem is interpreting "00" as the year 1900 rather than 2000, which could cause some computer systems to malfunction.

In NPP safety systems and plant operations systems that use software systems or embedded components, the Y2K problem could cause an event that could lead to an NPP shutdown, or could affect systems that either report post-shutdown plant status or that support emergency data collection capabilities. Additionally, to the extent that a Y2K deficiency could cause an NPP shutdown or transient, the resulting loss of electrical generation could introduce an electrical distribution grid instability and a resulting loss of offsite power. Y2K issues also have the potential to affect plant support or administrative systems. Most NPP safety systems that ensure an NPP is maintained in a safe condition are controlled by analog rather than digital systems and, consequently, are not affected by Y2K issues.

Since 1996, the NRC has been working with NPP licensees to ensure that NPP systems are Y2K ready before year 2000. To ensure that licensees of operating U.S. NPPs were aware of the Y2K issue, the NRC issued Information Notice (IN) 96-70, "Year 2000 Effect on Computer System Software," on December 24, 1996. In IN 96-70, the staff described the potential problems that nuclear facility computer systems and software might encounter during the transition from 1999 to 2000.

In 1997, the Nuclear Energy Institute (NEI) took the lead in developing industry-wide guidance for addressing Y2K issues in the nuclear power industry and, with cooperation from the Nuclear Utility Software Management Group (NUSMG), issued NEI/NUSMG 97-07, "Nuclear Utility Year 2000 Readiness." Subsequently, to address contingency planning, NEI and NUSMG issued NEI/NUSMG 98-07, "Nuclear Utility Year 2000 Readiness Contingency Planning." In Generic Letter (GL) 98-01 and its supplement, "Year 2000 Readiness of Computer Systems at Nuclear Power Plants," the NRC accepted the guidance presented in NEI/NUSMG 97-07 as an appropriate methodology for addressing Y2K readiness in NPPs. The staff also determined that the guidance presented in NEI/NUSMG 98-07 was appropriate for developing (1) system Y2K contingency plans, (2) contingency plans for internal facility risks, (3)

are consistent with industry guidance.

By July 1, 1999, licensees for all 103 operating NPPs reported the status of their Y2K readiness to the NRC. Regarding NRC's highest priority -- the uninterrupted performance of NPP safety systems -- all licensees reported that Y2K readiness efforts are completed, and that no remaining Y2K-related problems exist that could affect the performance of safety systems or the capability for safely shutting down an NPP. Licensees for 68 of these plants had also completed the next higher order of Y2K readiness as of July 1, 1999, stating that all of their computer systems that support plant operations are Y2K ready. Licensees for the remaining 35 plants reported that, to be fully Y2K ready, additional work would be completed on a few non-safety-related systems or components that support plant operations and administrative functions. Typically, the remaining work to be completed has been scheduled for outages in the fall, or upon delivery of replacement components.

The status of NPP Y2K readiness, including the NPPs that are Y2K ready, is shown in the figure. The solid gray regions of the chart represent the number of NPPs that are already Y2K ready or are scheduled to be Y2K ready on the corresponding date. The diagonally striped regions of the chart represent the number of NPPs that are not scheduled to be Y2K ready on the corresponding date, and that have systems to be remediated that could affect power operations. (Remediation is defined in NEI/NUSMG 98-07 as the process of retiring, replacing, or modifying software or devices that have been determined to be affected by the Y2K problem.) The white regions of the chart represent the number of NPPs that are not scheduled to be Y2K ready on the corresponding date, and whose non-systems could only affect administrative functions at the plant.

The NRC issued a preliminary report on NPP Y2K readiness on July 19, 1999. That report integrated the initial findings of NRC staff reviews of licensee Y2K readiness programs at all 103 NPPs with the licensee responses to GL 98-01, Supplement 1. Most of the NRC onsite reviews of licensee Y2K programs at the 103 NPPs presented sufficient information for the staff to conclude licensee Y2K readiness programs were consistent with staff-acceptable industry guidance. However, the staff could not complete reviews of licensee programs for 14 NPPs because these licensees had not finished some phase of Y2K readiness preparation by the date of the staff's review. The staff conducted followup reviews of these licensees by August 13, 1999. The staff found that in the one case of Cooper Nuclear Station (CNS), the licensee had not completed its integrated contingency plan (ICP) by July 1, 1999 (CNS safety-related systems are Y2K ready), although CNS had been previously listed as Y2K ready. The staff has added this licensee to its list of licensees to be tracked through completion of their Y2K readiness program.

Additionally, during a planned audit of its NPP Y2K inventory, the licensee for CNS discovered three components that were improperly addressed by its contractor. One component was in an operational support system and had been incorrectly classified as Y2K compliant when it was actually Y2K ready. The other two components were measurement and test equipment (administrative support systems). None of

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ABBREVIATIONS

ARERAS	atmospheric radioactive effluent release assessment system
BIOS	basic input output system
CNS	Cooper Nuclear Station
ERDS	emergency response data system
ERFCS	emergency response facility monitoring and trending computer system
FDAS	fire detection and alarm system
GENE	General Electric Nuclear Energy
GL	generic letter
ICP	integrated contingency plan
ICS	integrated computer system
IN	Information Notice
MAS	main annunciator system
MIDAS	meteorological information and dispersion system
NEI	Nuclear Energy Institute
NPP	Nuclear Power Plant
NRC	Nuclear Regulatory Commission
NUSMG	Nuclear Utility Software Management Group
PBAPS	Peach Bottom Atomic Power Station
RMS	radiation monitoring system
SECY	Letter from NRC staff to Commission
SPDS	safety parameter display system
SRM	staff requirements memorandum
TI	temporary instruction
Y2K	Year 2000

1 INTRODUCTION

This report presents the status of Year 2000 (Y2K) activities at the 103 operating U.S. nuclear power plants (NPPs) as of September 1, 1999. The status was determined by integrating the results of NRC staff reviews of licensee responses to Generic Letter (GL) 98-01, Supplement 1, "Year 2000 Readiness of Computer Systems at Nuclear Power Plants," with the findings of regional staff reviews conducted at each NPP site.

The regulatory framework regarding issues such as enforcement policy and NRC contingency actions to support the transition from 1999 to 2000 will be addressed in a supplement to this report.

NRC regional staff conducted reviews of licensee Y2K activities at each NPP site following the guidance of Temporary Instruction (TI) 2515/141, "Review of Year 2000 (Y2K) Readiness of Computer Systems at Nuclear Power Plants." NRC staff reviews verified that licensees were implementing Y2K programs and processes consistent with the industry guidance in NEI/NUSMG 97-07, "Nuclear Utility Year 2000 Readiness," and NEI/NUSMG 98-07, "Nuclear Utility Year 2000 Readiness Contingency Planning," both of which have been found acceptable by the staff. Additionally, the NRC received responses to GL 98-01, Supplement 1, from licensees of all 103 operating NPPs.

The staff incorporated these two sources of information regarding Y2K readiness into this report. Followup activities and the scheduled completion dates for the NPPs not yet declared to be fully Y2K ready are also presented here.

In Section 2, "Background," the staff summarizes the nature of the Y2K problem, the history of NRC activities related to resolution of this problem in the nuclear power industry, and the scope of activities conducted by the staff to verify that plants will be Y2K ready before the end of 1999. In Section 3, "Review and Integration Approach," the staff describes the methodology it used to perform onsite reviews of licensee Y2K activities for each of the 103 NPPs and the methodology it used to integrate the results of these reviews with the licensee responses to GL 98-01, Supplement 1. In Section 4, "Review Results," the staff summarizes the findings of its reviews of licensee Y2K program activities and the licensee responses to GL 98-01, Supplement 1, and lists the scheduled completion dates for the plants not yet declared Y2K ready. In Section 5, "Future Activities," the staff describes the activities it will perform in the months between September 1999 and March 2000. In Section 6, "Conclusions," the staff presents its conclusions about Y2K readiness in U.S. NPPs.

2 BACKGROUND

The Y2K computer problem pertains to the potential for date-related problems that may arise in a software system or an embedded digital component. Among these problems are not representing the year properly, not recognizing leap years, and erroneous date-based or time-based calculations. An example of a date-related problem is reading "00" as the year 1900 rather than 2000, which could cause some computer systems to malfunction. A software system or an embedded digital component that is determined to be "Y2K compliant" accurately processes date and time data (including calculating, comparing, and sequencing data) from, into, and between the years 1999 and 2000. A software system or an embedded digital component that is determined to be "Y2K ready" performs its functions correctly, although the system or component is not Y2K compliant.

In NPP safety systems and plant operations systems that use software systems or embedded digital components, the Y2K problem could cause an event that could lead to an NPP shutdown, or could affect systems that either report post-shutdown plant status or that support emergency data collection capabilities. Additionally, to the extent that a Y2K deficiency could cause an NPP shutdown or transient, the resulting loss of electrical generation could introduce an electrical distribution grid instability and a resulting loss of offsite power. Y2K issues can also affect plant support or administrative systems. Most NPP safety systems are controlled by analog systems and, consequently, are not affected by Y2K issues.

A timeline of significant NRC Y2K regulatory activities is presented in Figure 1. Since 1996, the NRC has been working with NPP licensees to ensure that NPP systems are Y2K ready before 2000. To ensure that licensees of operating U.S. NPPs were aware of the Y2K issue, the NRC issued Information Notice (IN) 96-70, "Year 2000 Effect on Computer System Software," on December 24, 1996. In IN 96-70, the staff described the potential problems that nuclear facility computer systems and software might encounter during the transition from 1999 to 2000. The NRC sent copies of this information notice to all U.S. NPP licensees, fuel cycle facility licensees, and nuclear materials licensees.

In 1997, the Nuclear Energy Institute (NEI) took the lead in developing industry-wide guidance for addressing Y2K issues in the nuclear power industry and, with cooperation from the Nuclear Utility Software Management Group (NUSMG), issued NEI/NUSMG 97-07. Subsequently, in August 1998, NEI and NUSMG issued NEI/NUSMG 98-07. In GL 98-01 and its supplement, the NRC accepted the guidance presented in NEI/NUSMG 97-07 as appropriate methodologies for addressing Y2K readiness in NPPs.

In GL 98-01, the NRC requested that all holders of operating licenses for NPPs inform the NRC of steps they were taking to ensure that computer systems will function properly by 2000. Every licensee responded to GL 98-01, stating that an NRC-accepted program (NEI/NUSMG 97-07) had been adopted, the program addressed both safety-related and non-safety-related systems and components, and the plants would be Y2K

On June 22, 1999, in SECY-99-162, "Policy for Regulatory Actions for Licensees of Nuclear Power Plants That Have Not Completed Year 2000 Readiness Activities," the NRC staff proposed a policy for regulatory actions it would take for licensees of nuclear power plants that had not completed their Y2K readiness activities (including remediation and contingency planning) by July 1, 1999. This policy is also discussed in Section 5.

By July 1, 1999, the staff had received responses to GL 98-01, Supplement 1, from licensees of all 103 operating NPPs. As described in Section 4, the staff reviewed these responses and integrated the findings of these reviews with the findings of the staff's onsite reviews of licensee Y2K readiness programs. Between September 1999 and December 1999, the staff will continue to review the remaining licensee Y2K activities as they are completed. These activities are discussed in Section 5.

The staff also addressed decommissioned NPPs and concluded that the licensees of the 21 decommissioning nuclear power plants are implementing Y2K activities that address equipment and systems important to safety, so that there is reasonable assurance of adequate protection to public health and safety. A complete discussion of the status of the inspection activities for decommissioned plants is outside the scope of this report. The sections that follow address Y2K readiness in the 103 U.S. operating NPPs.

3 REVIEW AND INTEGRATION APPROACH

This section describes the methodology used by the NRC staff to conduct Y2K reviews at each of the 103 operating NPP sites, and to integrate the review findings with the licensee responses to GL 98-01, Supplement 1.

3.1 Site Review Methodology

The NRC reviews at each NPP site focused on the process followed by the licensees to achieve Y2K readiness to ensure these processes were consistent with the guidance presented in NEI/NUSMG 97-07 and NEI/NUSMG 98-07. The staff offered review guidance in Temporary Instruction (TI) 2515/141, "Review of Year 2000 (Y2K) Readiness of Computer Systems at Nuclear Power Plants." This TI is available on the NRC web site <http://www.nrc.gov>. The TI guidance contained 452 acceptance criteria that were based on guidance presented in NEI/NUSMG 97-07 and NEI/NUSMG 98-07. To guide the staff reviewers, the review criteria in the TI were arranged in a checklist format. The staff selected this format to ensure that the reviews would be comprehensive and conducted consistently at each NPP site. Additional guidance for applying the acceptance criteria was presented to NRC reviewers in training sessions and in telephone calls between the reviewers and NRC headquarters staff.

The acceptance criteria were divided into three major areas of Y2K readiness activities: (1) planning and initial assessment, (2) detailed assessment, and (3) contingency planning. These three major areas are further subdivided into more specific areas of acceptance criteria as follows:

Planning and Initial Assessment

- Management Planning
- Documentation
- Implementation Plans
- Initial Assessment

Detailed Assessment

- System/Component Detailed Assessment
- System/Component Remediation
- System/Component Testing and Validation
- System/Component Notification

Contingency Planning

- System/Component Contingency Planning
- Contingency Planning for Internal Facility Risks
- Contingency Planning for External Risks
- Integrated Contingency Planning

To review detailed assessment activities, the staff selected one system or a component from each of the following six plant system classes:

- Reactor Protection System and Engineered Safety Features System (including emergency diesel generators)
- Feedwater System and Balance of Plant Systems
- Radiation Monitoring Systems
- Emergency Notification Systems
- Plant Process Computer Systems
- Plant Security Systems

These six classes of plant systems were chosen to ensure that the NRC staff could review any system or component during the

4 REVIEW RESULTS

This section summarizes the staff's reviews of all 103 operating NPPs, and integrates the review findings with the licensee responses to GL-98-01, Supplement 1.

4.1 Assessment of NPP Licensee Y2K Programs

As described in Section 3.1, the staff reviewed licensee Y2K program implementations at all 103 operating NPP sites between April 1999 and July 1999. In some cases, the staff performed reviews before the licensees had completed all phases of their Y2K programs. For example, many licensees had not planned to complete integrated contingency planning activities until late June 1999, but the staff reviewed their Y2K program implementation in May or early June. Consequently, these licensees could not provide the staff with sufficient information at the time of the initial review for the staff to conclude that the licensee's integrated contingency planning process was consistent with industry guidance.

The staff found that of the 103 operating NPPs 14 required additional followup reviews to evaluate more fully each phase of the licensee's Y2K program. The staff conducted followup reviews between July 1 and August 13, 1999, and addressed only those portions of the applicable TI 2515/141 acceptance criteria that the staff could not evaluate during the its initial review, or that required additional clarification regarding the manner of implementing certain Y2K activities. Specifically, the staff reviewed detailed assessment activities and contingency planning activities at eight NPPs, only detailed assessment activities at two NPPs, and only contingency planning activities at four NPPs. The staff performed followup reviews at the following NPPs:

- Arkansas Nuclear One, Units 1 and 2
- Beaver Valley Power Station, Units 1 and 2
- Cooper Nuclear Station
- Grand Gulf Nuclear Station, Unit 1
- Indian Point, Unit 2
- Prairie Island Nuclear Generating Plant, Units 1 and 2
- River Bend Station, Unit 1
- Three Mile Island Nuclear Station, Unit 1
- Vermont Yankee Nuclear Power Station
- Virgil C. Summer Nuclear Station, Unit 1
- Waterford Steam Electric Station, Unit 3

In 13 of the 14 reviews, the staff was able to conclude that the licensee programs were consistent with industry guidance.

In reviewing the integrated contingency planning activities at Cooper Nuclear Station (CNS), the staff determined that the licensee's integrated contingency plan (ICP) was not sufficiently complete to conclude that CNS was fully Y2K ready, although all safety-related systems and components were Y2K ready. The licensee presented a date of September 20, 1999, for completing the ICP. The staff will review the CNS ICP upon its completion.

Additionally, during a planned audit of its NPP Y2K inventory, the licensee for CNS

condition of the plant license or as a result of a regulatory commitment, but are not relied upon to maintain the plant in a safe condition.

Administrative support systems are non-safety-related systems that support administrative functions at the plant. For example, a meteorological system that produces plant environmental information, and a system for tracking personnel radiation exposures are administrative support systems. These systems are non-safety-related and generally are used to facilitate activities such as recording personnel activities and qualifications, maintaining equipment inventory records, and archiving records of plant operations.

4.2.1 NPP System Y2K Readiness

For plants that are not Y2K ready, the total number of operational support systems and administrative support systems that have not been remediated are shown in Figure 2. In this figure, the number of operational support systems that are scheduled to become Y2K ready are shown in the diagonally striped regions on the chart. The number of administrative support systems that are scheduled to become Y2K ready are shown in the white regions on the chart.

Included in the operational support systems is the CNS ICP that the staff determined during a follow-up review was not completed by July 1, 1999 (see discussion about CNS in Section 4.1). The staff, therefore, added this licensee to the staff's list of licensees to be tracked through completion of their Y2K readiness program.

The number of operational support systems that are scheduled to become Y2K ready remains nearly constant during July and August, decreasing from 28 systems on July 1, 1999, to 21 systems on September 1, 1999. Between September 1 and November 1, 1999, the number of operational support systems that are scheduled to be Y2K ready decreases by 16 systems. Of the remaining five systems on November 1, 1999, four systems are scheduled to become Y2K ready during November 1999 (three systems in Salem Nuclear generating Station, Unit 1; and one system in Comanche Peak Steam Electric Station, Unit 1). The remaining system is the Joseph M. Farley Nuclear Plant, Unit 2, digital electrohydraulic controller, which is discussed in Section 4.2.2.

As shown in Figure 2, the number of administrative support systems that are scheduled to be remediated decreases from 32 systems on July 1, 1999, to 16 systems on October 1, 1999. The remaining 16 systems are scheduled to be remediated during October 1999. This trend reflects licensee activities being scheduled for fall outages and software upgrade schedules.

4.2.2 NPP Y2K Readiness

The number of NPPs expected to be Y2K ready as a function of date are shown in Figure 3. The gray regions of the chart represent the number of NPPs that are already Y2K ready or are scheduled to be Y2K ready on the corresponding date. The diagonally striped regions of the chart represent the number of NPPs that are not scheduled to be Y2K ready on the corresponding date and have operational support systems to be remediated. The white regions of the chart represent the number of NPPs that are not scheduled to be Y2K ready on the corresponding date, and that have only

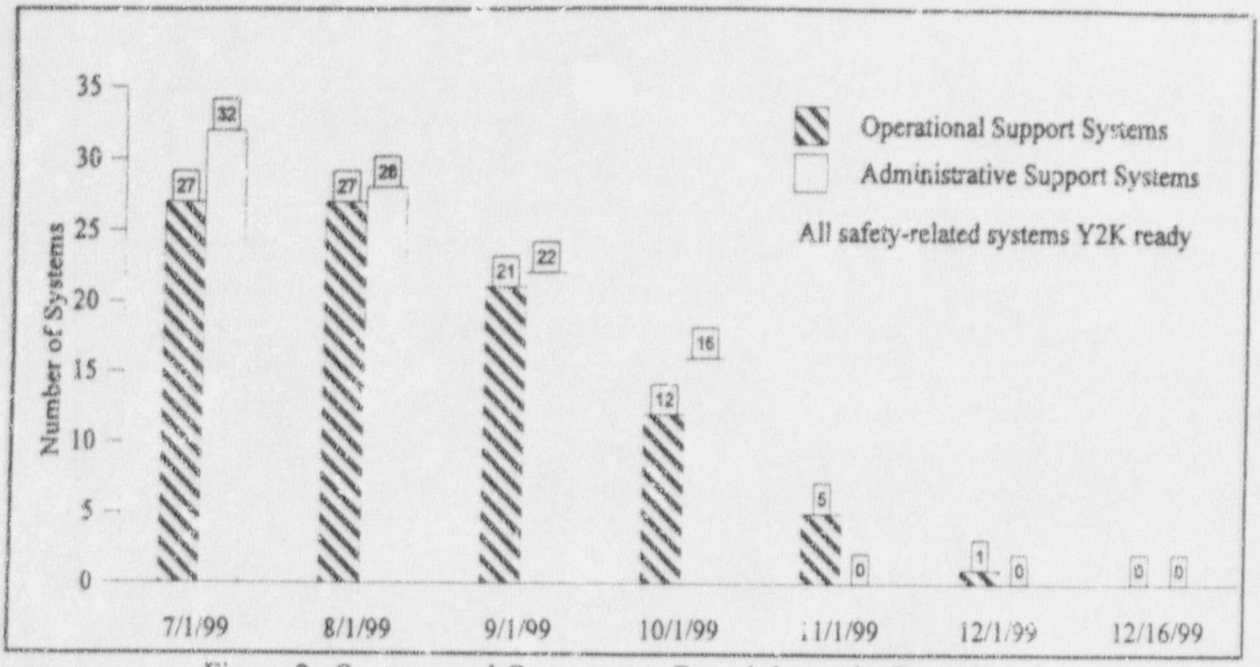

Figure 2. Systems and Components Remaining to be Remediated

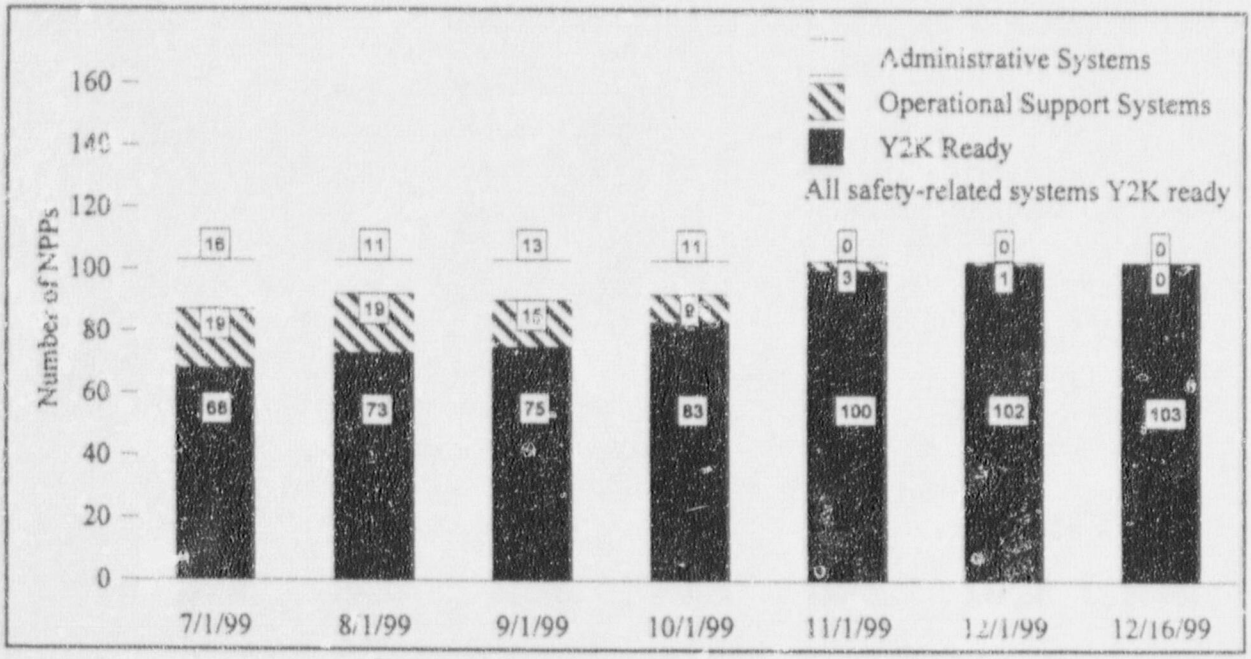

Figure 3. Status of NPP Y2K Readiness

5 FUTURE ACTIVITIES

In May 1999, the NRC staff developed an interim enforcement policy in SECY 99-135, "Interim Enforcement Policy Regarding Enforcement Discretion for Nuclear Power Plants During the Year 2000 Transition." In SECY-99-135, the staff sought the Commission's approval to revise the NRC enforcement policy for NPPs to add an interim policy to exercise enforcement discretion for noncompliance with license conditions, including technical specifications, during the Y2K transition or rollover periods. The Commission reviewed the interim enforcement policy, and presented guidance for its implementation in a staff requirements memorandum (SRM) dated July 8, 1999, "Staff Requirements – SECY 99-135 –Interim Enforcement Policy Regarding Enforcement Discretion for Nuclear Power Plants During the Year 2000 Transition." The NRC published the interim enforcement policy in the Federal Register in July 1999. The staff is implementing procedures for this policy and is assigning appropriate staff as part of the NRC's contingency planning effort.

The staff continues to monitor licensee progress, and will verify the Y2K readiness of each system and embedded digital component as they are finished. The staff will discuss these verification activities in inspection reports.

On June 22, 1999, in SECY-99-162, "Policy for Regulatory Actions for Licensees of Nuclear Power Plants That Have Not Completed Year 2000 Readiness Activities," the NRC staff proposed a policy for regulatory actions it would take for licensees of NPPs that had not completed their Y2K readiness activities (including remediation and contingency planning) by July 1, 1999. The proposed policy addressed NRC commitments to Congress that the agency would assess licensees' Y2K preparedness and determine the need for plant-specific regulatory action, up to and including the issuance of shutdown orders. The proposed policy supplemented NRC Y2K contingency plans and the NRC's policy on enforcement discretion for Y2K-related issues, which was described in SECY-99-135.

The Commission approved the proposed policy with supplemental guidance in an SRM dated August 5, 1999, "Staff Requirements – SECY-99-162 –Policy for Regulatory Actions for Licensees of Nuclear Power Plants That Have Not Completed Year 2000 Readiness Activities." The guidance required that the staff take regulatory actions, where appropriate, sufficiently in advance of the Y2K rollover date (i.e., as soon as September 30, 1999, but no later than December 1, 1999) to ensure that plants are in a safe, stable state during the Y2K transition. Additionally, the staff will provide current and projected completion dates for Y2K readiness.

The staff will continue to monitor licensee schedules reported in their GL 98-01 responses and will determine whether additional actions are required. On the basis of current licensee schedules for finishing Y2K activities, the staff does not anticipate directing plant-specific actions.

Additionally, the staff will maintain a web site, <http://www.nrc.gov> , to keep the public abreast of all activities related to NPP

6 CONCLUSIONS

As of September 1, 1999, the staff concludes (1) no Y2K concerns remain that could affect the performance of safety systems, (2) licensees for all 103 NPPs are following NRC-acceptable industry guidance for achieving Y2K readiness, (3) 75 NPPs are Y2K ready, (4) 28 NPPs are not Y2K ready, and (5) the completion schedules for the remaining few non-safety-related items that are still not Y2K ready will be accomplished before the transition from 1999 to 2000. The NRC staff will verify completion of licensee readiness activities as they are completed.

The NRC believes that licensees will be able to operate all 103 NPPs safely during the transition from 1999 to 2000, and does not anticipate the need to direct any significant plant-specific actions.

Table 1 NPP Y2K Readiness Status as of September 1, 1999 (continued)		
NPP Name	**NPP Licensee**	**Readiness Status/Date***
Edwin I. Hatch Nuclear Plant, Units 1 and 2	Southern Nuclear Operating Company, Inc.	Y2K Ready
Enrico Fermi Atomic Power Plant, Unit 2	Detroit Edison Company	Y2K Ready
Fort Calhoun Station, Unit 1	Omaha Public Power District	Y2K Ready
Grand Gulf Nuclear Station, Unit 1	Entergy Operations, Inc.	Y2K Ready
H. B. Robinson Plant, Unit 2	Carolina Power and Light Company	Y2K Ready
Hope Creek Nuclear Station, Unit 1	Public Service Electric and Gas Co. of New Jersey	10/29/99
Indian Point Unit No. 2	Consolidated Edison Company of New York, Inc.	Y2K Ready
Indian Point Station, Unit 3	Power Authority of the State of New York	Y2K Ready
James A. FitzPatrick Nuclear Power Plant	Power Authority of the State of New York	Y2K Ready
Joseph M. Farley Nuclear Plant, Unit 1	Southern Nuclear Operating Company, Inc.	Y2K Ready
Joseph M. Farley Nuclear Plant, Unit 2	Southern Nuclear Operating Company, Inc.	12/16/99
Kewaunee Nuclear Power Plant	Wisconsin Public Service Corporation	Y2K Ready
LaSalle County Station, Units 1 and 2	Commonwealth Edison Company	Y2K Ready
Limerick Generating Station, Unit 1	PECO Energy Company	Y2K Ready
Limerick Generating Station, Unit 2	PECO Energy Company	9/30/99
Millstone Nuclear Power Station, Units 2 and 3	Northeast Nuclear Energy Company	Y2K Ready
Monticello Nuclear Generating Plant	Northern States Power Company	Y2K Ready
Nine Mile Point Nuclear Station, Units 1 and 2	Niagara Mohawk Power Corporation	Y2K Ready
North Anna Power Station, Unit 1	Virginia Electric and Power Company	Y2K Ready

* All safety-related systems are Y2K ready

Table 1 NPP Y2K Readiness Status as of September 1, 1999 (continued)		
NPP Name	**NPP Licensee**	**Readiness Status/Date***
Sequoyah Nuclear Plant, Units 1 and 2	Tennessee Valley Authority	10/31/99
Shearon Harris Nuclear Power Plant, Unit 1	Carolina Power and Light Company	Y2K Ready
South Texas Project Electric Generating Station, Units 1 and 2	South Texas Project Nuclear Operating Company	10/31/99
St. Lucie Plant, Units 1 and 2	Florida Power and Light Company	Y2K Ready
Surry Power Station, Units 1 and 2	Virginia Electric and Power Company	Y2K Ready
Susquehanna Steam Electric Station, Units 1 and 2	Pennsylvania Power and Light Company	Y2K Ready
Three Mile Island Nuclear Station, Unit 1	GPU Nuclear Corp.	10/21/99
Turkey Point Plant, Units 3 and 4	Florida Power and Light Company	Y2K Ready
Vermont Yankee Nuclear Power Station	Vermont Yankee Nuclear Power Corporation	9/30/99
Virgil C. Summer Nuclear Station, Unit 1	South Carolina Electric & Gas Company	Y2K Ready
Vogtle Electric Generating Plant, Units 1 and 2	Southern Nuclear Operating Company, Inc.	Y2K Ready
Washington Public Power Supply System Nuclear Project No. 2	Washington Public Power Supply System	Y2K Ready
Waterford Steam Electric Station, Unit 3	Entergy Operations, Inc.	Y2K Ready
Watts Bar Nuclear Plant, Unit 1	Tennessee Valley Authority	10/31/99
William B. McGuire Nuclear Station, Units 1 and 2	Duke Energy Corporation	Y2K Ready
Wolf Creek Generating Station	Wolf Creek Nuclear Operating Corporation	Y2K Ready

* All safety-related systems are Y2K ready

Table 2 NPP Systems and Components Requiring Completion of Year 2000 Readiness Activities as of September 1, 1999 (continued)			
NPP	**NPP System and Completion Activities**	**NPP System Type**	**Completion Date***
Beaver Valley Power Station, Unit 1	Plant Monitoring and Trending Computer (IPC). This system monitors and trends Unit 1 processes. The IPC performs no plant control or actuation functions. If this system is left uncorrected and it fails because of a Y2K-related failure, it would not affect the safety status or generation capability of the plant but could require operators to revert to primary indicators and data sources. A vendor is remediating the system.	Operations	9/30/99
Beaver Valley Power Station, Unit 2	Emergency Response Facility Monitoring and Trending Computer (ERFCS). This system monitors and trends data and sends them to the emergency response facility in the event of an alert declaration; it functions as a safety parameter display system (SPDS) for Unit 2. The ERFCS performs no plant control or actuation functions. If this system is left uncorrected and it fails because of a Y2K-related failure, it would not affect safety status or generation capability of the plant but could result in the loss of historical trending during accidents, loss of displays in the emergency response facility, and loss of data to the ERDS; automatic control of plant functions would not be affected.	Operations	9/30/99
Browns Ferry Nuclear Power Station, Units 2 and 3	Health Physics Information Management System. This administrative computer system tracks and reports radiation exposure and access control to radiation areas. If this system is left uncorrected and it fails because of a Y2K-related failure, the plant would default to a manual process. The replacement program is complete and training is in progress to facilitate implementation.	Admin.	10/31/99

* All safety-related systems are Y2K ready

Table 2 NPP Systems and Components Requiring Completion of Year 2000 Readiness Activities as of September 1, 1999 (continued)

NPP	NPP System and Completion Activities	NPP System Type	Completion Date*
Comanche Peak Steam Electric Station, Unit 1	Unit 1 Condensate Polishing Programmable Logic Controller System. This non-safety related computer system controls feedwater treatment processes for water being drawn off the condenser. If this system is left uncorrected and it fails because of a Y2K-related failure, this system may be bypassed. The Unit 1 modification is similar to the successful modification at Unit 2. Modification of this system requires a plant outage.	Operations	11/30/99
Comanche Peak Steam Electric Station, Units 1 and 2	Common Facility - Plant Simulator. The plant training simulator provides operator training in a simulated control room environment identical to the plant control room. If this system is left uncorrected and it fails because of a Y2K-related failure, the plant would not meet its regulatory commitment regarding onsite training facility capabilities, and plant operator training schedules could be affected.	Admin.	10/30/99
Cooper Nuclear Station	Integrated Contingency Planning. The integrated contingency plan (ICP) provides facility management with a comprehensive perspective of the risks associated with Y2K-induced events, and includes any remedial actions planned during key rollover dates. The licensee has developed contingency plans for individual systems and components. The licensee is in the process of integrating these individual contingency plans into the ICP.	Operations	9/20/99

* All safety-related systems are Y2K ready

Table 2 NPP Systems and Components Requiring Completion of Year 2000 Readiness Activities as of September 1, 1999 (continued)

NPP	NPP System and Completion Activities	NPP System Type	Completion Date*
Hope Creek Nuclear Station, Unit 1	Plant Training Simulator. This system provides operator training in a simulated control room environment identical to the plant control room. If this system is left uncorrected and it fails because of a Y2K-related failure, the plant would not meet its regulatory commitment regarding on site training facility capabilities, and plant operator training schedules could be affected. The licensee is upgrading the plant simulator with the same software being used to upgrade the SPDS.	Admin.	10/29/99
	Emergency Response Data System (ERDS). This PC-based system sends emergency response data information to the NRC and local authorities. If this system is left uncorrected and it fails because of a Y2K-related failure, the licensee would report information using existing plant emergency operating procedures. The licensee is waiting for a replacement engineer workstation to be delivered.	Admin.	9/30/99
Joseph M. Farley Nuclear Plant, Unit 2	Unit 2 Turbine Digital Electrohydraulic Controller. This system controls steam flow to the plant main turbine, and provides turbine overspeed protection. If this system is left uncorrected and it fails because of a Y2K-related failure, the plant could not control turbine speed, which could affect electrical power generation. Contingency plans have been developed to mitigate the impact of Y2K-related events at key rollover dates. This system was successfully installed on Unit 1 and was tested for Y2K dates. Remediation of this system is scheduled for a plant refueling outage from October 16 to December 16, 1999.	Operations	12/16/99

* All safety-related systems are Y2K ready

Table 2 NPP Systems and Components Requiring Completion of Year 2000 Readiness Activities as of September 1, 1999 (continued)

NPP	NPP System and Completion Activities	NPP System Type	Completion Date*
Oyster Creek Nuclear Generating Station	REMI/AACS/CISCO. This integrated software system manages personnel radiation exposure and controls access to radiologically controlled areas. If this system is left uncorrected and it fails because of a Y2K-related failure, control of radiation exposure and access would be tracked manually.	Admin.	9/30/99
Peach Bottom Atomic Power Station, Unit 2	3D Monicore. This system monitors reactor operation processes and calculates reactor thermal power operating limits. If this system is left uncorrected and it fails because of a Y2K-related failure, the plant operators would calculate thermal operating limits manually.	Operations	9/30/99
Peach Bottom Atomic Power Station, Unit 3	Digital Feedwater System. This non-safety-related system controls feedwater flow rate into the reactor vessel, and is required for plant operation. The digital feedwater system to be installed in Unit 3 is identical to the Peach Bottom Unit 2 system, which has been installed, tested, and is operational. The hardware and software have been developed, and are on-site, ready for installation. A planned outage for installing this system is currently scheduled.	Operations	10/31/99
	Turbine Vibration Monitor. This system monitors reactor feedwater pump turbine and the main turbine system operation and trips these turbines when excessive vibration is detected. If this system is left uncorrected and it fails because of a Y2K-related failure, it will not result in a spurious feedwater pump turbine trip or a main turbine trip. These two trips are for equipment protection only. An identical computer system upgrade has been performed on Peach Bottom Unit 2. The Unit 3 work will be performed during the next outage.	Operations	10/31/99

* All safety-related systems are Y2K ready

Table 2 NPP Systems and Components Requiring Completion of Year 2000 Readiness Activities as of September 1, 1999 (continued)

NPP	NPP System and Completion Activities	NPP System Type	Completion Date*
Salem Nuclear Generating Station, Unit 1 (cont)	Plant Computer Monitoring and Alarm System. This system monitors and displays plant data for reactor operations. If this system is left uncorrected and it fails because of a Y2K-related failure, the operators would obtain needed plant information from the normal plant indications. This system is needed for operations when the reactor core coolant level is lowered to support mid-loop operations (a special refueling outage maintenance procedure for steam generator maintenance). There are no regulatory requirements for this system while the plant is at full power. This upgrade must be performed while the plant is in an outage. This upgrade has been performed on Salem Unit 2 and a similar upgrade is scheduled for the Unit 1 refueling outage.	Operations	11/6/99
Salem Nuclear Generating Station, Units 1 and 2	Plant Training Simulator. The plant training simulator provides operator training in a simulated control room environment identical to the plant control room. If this system is left uncorrected and it fails because of a Y2K-related failure, the plant would not meet its regulatory commitment regarding on site training facility capabilities, and plant operator training schedules could be affected. The licensee is upgrading the plant simulator with the same software being used to upgrade the SPDS.	Admin.	10/29/99
	Emergency Response Data System (ERDS). This PC-based system sends emergency response data information to the NRC and local authorities. If this system is left uncorrected and it fails because of a Y2K-related failure, the licensee would report information using existing plant emergency operating procedures. The licensee is waiting for a replacement engineer workstation to be delivered.	Admin.	9/30/99

* All safety-related systems are Y2K ready

Table 2 NPP Systems and Components Requiring Completion of Year 2000 Readiness Activities as of September 1, 1999 (continued)

NPP	NPP System and Completion Activities	NPP System Type	Completion Date*
South Texas Project Electric Generating Station, Units 1 and 2	Plant Integrated Computer System (ICS). This system collects plant operating information and displays plant status in the main control room. If this system is left uncorrected and it fails because of a Y2K-related failure, the operators would use existing plant instrumentation information as required by plant procedures and training. This system has been installed and tested for Y2K readiness, but the final change from all legacy systems to the new ICS has not yet occurred. This project has been ongoing for several years to address obsolescence, and was not implemented as a result of the licensee's Y2K project.	Operations	10/31/99
Three Mile Island Nuclear Station, Unit 1	Digital Turbine Control System. This system controls steam flow to the plant main turbine. If this system is left uncorrected and it fails because of a Y2K-related failure, the plant could not control turbine speed, which could affect electrical power generation. Contingency plans have been developed to mitigate the impact of Y2K-related events at key rollover dates. A replica simulation of the digital turbine control system was configured and tested in the designer/supplier's shop to demonstrate the system is Y2K ready.	Operations	10/21/99
	REM/AACS/CISCO. This system manages personnel radiation exposures and controls access to radiologically controlled areas. If this system is left uncorrected and it fails because of a Y2K-related failure, control of radiation exposure and access would be tracked manually.	Admin.	9/30/99

* All safety-related systems are Y2K ready

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10. SUPPLEMENTARY NOTES

11. ABSTRACT (200 words or less)

This report describes the results of NRC staff reviews of licensee nuclear power plant (NPP) year 2000 (Y2K) readiness activities conducted at each nuclear power plant. The results of the staff reviews are integrated with the July 1, 1999, licensee responses to Generic Letter (GL) 98-01, Supplement 1, "Year 2000 Readiness of Computer Systems at Nuclear Power Plants," and licensee follow-up reports of Y2K readiness. All licensees of NPPs reported in response to GL 98-01, Supplement 1, that there are no Y2K-related problems that directly affect the performance of safety systems. The Nuclear Regulatory Commission has confirmed by onsite reviews that at all 103 U.S. nuclear power plants there are no Y2K-related problems which affect the performance of safety systems needed to safely shut down the plants. As of September 1, 1999, the staff concludes that licensees of 75 of the 103 plants have completed all activities to ensure computer systems and digital embedded components that support plant operations are "Y2K ready. Licensees for 28 plants have additional work to complete on a few non-safety systems or components that support plant operations and administrative functions. These licensees provided scheduled completion dates for their plants. Typically, the licensee is completing the remainingY2K work after July 1, 1999, because the work requires a plant outage scheduled for the fall of 1999 or because the licensee is waiting for delivery of a replacement component. All licensees are expected to be Y2K ready by December 16, 1999.

12. KEY WORDS/DESCRIPTORS (List words or phrases that will assist researchers in locating the report.)

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Y2K readiness
Y2K Ready
Y2K Compliant
Nuclear power plant
Contingency Plan
Contingency Planning

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FOR IMMEDIATE RELEASE
(Tuesday, September 28, 1999)

NRC SENDS LETTERS TO UTILITIES TO FOLLOW UP Y2K READINESS AT NUCLEAR POWER PLANTS

The Nuclear Regulatory Commission has sent letters to those utilities with nuclear power plants that are scheduled to be "Y2K ready" after September 30 to verify the status of readiness and the dates when plants will be fully Y2K ready.

There are no Y2K-related problems affecting the performance of safety systems needed to safely operate or shut down at any of the 103 nuclear power plants. By September 30, 91 of these plants are scheduled to have completed all remaining Y2K work for their computer systems that support plant operation. In addition, they will have contingency plans in place. The remaining 12 plants have additional work to complete on a few non-safety systems or devices, to be fully Y2K ready. These plants are continuing to progress toward Y2K readiness.

As a follow-up to July 1 Y2K readiness reports from licensees, the NRC has sent letters to these 12 plants to ensure that all deficiencies are repaired before the Y2K transition. In order to schedule NRC inspections, licensees were asked to provide any changes to the scope of remaining Y2K work or to the projected completion date (previously provided to NRC July 1). The NRC sent letters to the following plants:

Plant Name	Nearest City	Y2K Ready Date
Comanche Peak Unit 1	Glen Rose, TX	11/30/99
Comanche Peak Unit 2	Glen Rose, TX	10/30/99
Cook Units 1 & 2	Bridgman, MI	10/30/99
Hope Creek	Hancocks Bridge, NJ	10/29/99
Farley Unit 2	Columbia, AL	12/16/99
Peach Bottom Unit 3	Delta, PA	10/31/99
Salem Unit 1	Hancocks Bridge, NJ	11/6/99
Salem Unit 2	Hancocks, Bridge, NJ	10/29/99
South Texas Units 1 & 2	Bay City, TX	10/31/99
Three Mile Island Unit 1	Middletown, PA	10/21/99

Typically, the remaining work will be completed in conjunction with a scheduled plant outage or when a replacement component is delivered. The NRC will continue to monitor and verify completion of Y2K activities at these plants.

ENCLOSURE 2

Details of the remaining work are provided in an NRC report, NUREG 1706, "Year 2000 Readiness in U.S. Nuclear Power Plants." It is available on the NRC's Y2K web site at http://www.nrc.gov/NRC/NEWS/year2000.html.

The "Y2K" problem refers to a computer's potential inability to recognize dates beginning with January 1, 2000, and beyond. It arises from computer programs that use two-digit numbers to represent a calendar year (such as "98" for 1998). For example, a computer system could read "00" as 1900, rather than 2000, potentially causing a computer system to malfunction. "Y2K ready" means that functions provided by a computer will be carried out successfully with the coming of the Year 2000.

#

EEIB ACTION ASSIGNMENT FORM

Date: 10/4/99

*ASSIGNED TO:		ACTION TYPE?	
Chiramal		Green Ticket	x
Marinos		Yellow Ticket	
Mauck	X	WITS Item	
Thatcher		Division Action	
		Branch Action	

SUBJECT: Nuclear Power Plants Y2K Compliance (Ed Mayer)

DUE DATES:		TRACKING NUMBERS:	
To EDO	~~10/12/99~~ 10/19/99	Green #:	G19990490
To NRR Mailroom	~~10/6/99~~ 10/13/99	Yellow #:	
To Division Director		WITS #:	
To Branch Chief		Division #:	99-44
Other ( )		Branch #:	99-35

(Use these numbers when providing status!)

SPECIAL INSTRUCTIONS:

REQUEST EXTENSION; AT LEAST TO 10/19 TO EDO

ASSIGN THIS TO BARRY MARCUS

Put Julie on distribution with action # in parentheses beside her name [for example, JCrutchley (99-10)]. If there is no document response, please send Julie an e-mail with the action # in the subject line stating that the action has been completed.

* IF ITEM IS TO MULTIPLE ASSIGNEES: All input should be given to Julie for consolidation into one package for EEIB. Do not send material to requestor yourself.

99-44

Assigned to: Joe 9-30

ACTION

EDO Principal Correspondence Control

FROM:

DUE: 10/12/99

EDO CONTROL: G19990490
DOC DT: 09/16/99
FINAL REPLY:

Representative Don Young

TO:

Rathbun, OCA

FOR SIGNATURE OF :

** GRN **

CRC NO: 99-0789

Travers, EDO

DESC:

NUCLEAR POWER PLANTS Y2K COMPLIANCE (Ed Mayer)

ROUTING:

Travers
Paperiello
Miraglia
Norry
Blaha
Burns
Congel, IRO
Beecher, OPA
Satorius, OEDO

May want to request extension

DATE: 09/29/99

ASSIGNED TO: NRR

CONTACT: Collins

SPECIAL INSTRUCTIONS OR REMARKS:

NRR Action: D.L. Strosnider
NRR Received: September 30, 1999

NRR Routing: Collins/Kane
ADIP
Sheron
NRR Mailroom

ACTION
DUE TO NRR DIRECTOR'S OFFICE
BY 10/6/99

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

PAPER NUMBER: CRC-99-0789 LOGGING DATE: Sep 21 99

ACTION OFFICE: ~~ORA~~ EDO

AUTHOR: DON YOUNG, REP
AFFILIATION: U.S. HOUSE OF REPRESENTATIVES

ADDRESSEE: RATHBUN

LETTER DATE: Sep 16 99 FILE CODE: R&D 19

SUBJECT: NUCLEAR POWER PLANTS Y2K COMPLIANCE

ACTION: Signature of ~~Director, OCA~~ EDO

DISTRIBUTION: OCA TO ACK

SPECIAL HANDLING: NONE

CONSTITUENT: ED MAYER

NOTES:

DATE DUE: Oct ~~8~~ 15 99

SIGNATURE: DATE SIGNED:
AFFILIATION: