



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

March 1, 1996

The Honorable Bob Graham
 United States Senator
 P.O. Box 3050
 Tallahassee, Florida 32315

Dear Senator Graham:

I am responding to your letter of December 27, 1995, to the Secretary of the Department of Energy, in which you forwarded a letter dated December 15, 1995, from your constituent, Ms. Betty Napier of Port St. Lucie, Florida. Ms. Napier expressed concern about the safety of Florida Power & Light Company's (FP&L's, the licensee's) St. Lucie nuclear power plant. On February 5, 1996, the Department of Energy forwarded your letter to the U.S. Nuclear Regulatory Commission (NRC) for action and informed you of this change.

Ms. Napier expressed her concern about "continuing problems" at the plant and the impact on public health and safety "should an accident occur." Specifically, Ms. Napier cited such issues as a cutback of experienced plant personnel, the characterization of the leakage of radioactive material into water as being slightly radioactive, and recurring improper installations of safety valves. Details regarding the events associated with Ms. Napier's concerns and associated FP&L and NRC actions are provided in Enclosure 1 to this letter. The events did not represent a threat to plant or public safety. Nonetheless, the NRC's review of the licensee's activities over the past year has resulted in increased regulatory attention.

The NRC periodically assesses the performance of each nuclear power plant under its Systematic Assessment of Licensee Performance (SALP) program. Although the previous two assessments of the St. Lucie plant covering combined periods from November 1990 to January 1994 had rated the plant as superior (the highest of three ratings), the NRC has recently observed a declining trend in performance in two of four functional areas (maintenance and operations). This perceived decline is reflected in the most recent SALP report (Enclosure 2) covering the period January 1994 through January 1996, in which the performance assessments in the maintenance and operations areas was downgraded from a rating of superior to good (middle of the three ratings). In spite of this decline, the NRC continues to conclude that this facility is being operated in a safe manner. The presence of two members of the NRC staff on site on a full time basis and the periodic region-based inspection program provides direct regulatory oversight of the licensee's activities.

Further, the NRC staff completed a detailed evaluation of issues that arose at the St. Lucie plant between August 1994 and August 1995 and identified some programmatic weaknesses. Independently, the licensee performed a detailed root cause analysis of recent events. On August 29, 1995, the licensee met with the NRC staff at a public meeting and detailed its analysis and plan for implementing a corrective action program. The NRC continues to conduct

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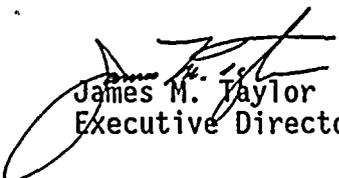
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Senator Bob Graham

public meetings with the licensee and performing inspections to monitor the licensee's progress in implementing this program. Although it is early to evaluate the effectiveness of the licensee's corrective actions, I assure you that the NRC will continue to closely monitor the licensee's performance to make certain it will be maintained at an acceptable level.

Sincerely,


James M. Taylor
Executive Director for Operations

- Enclosures:
1. Detailed Information Pertaining to the Concerns of Ms. Betty Napier
 2. SALP Report 50-335/95-99, dated February 8, 1996

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Original signed by
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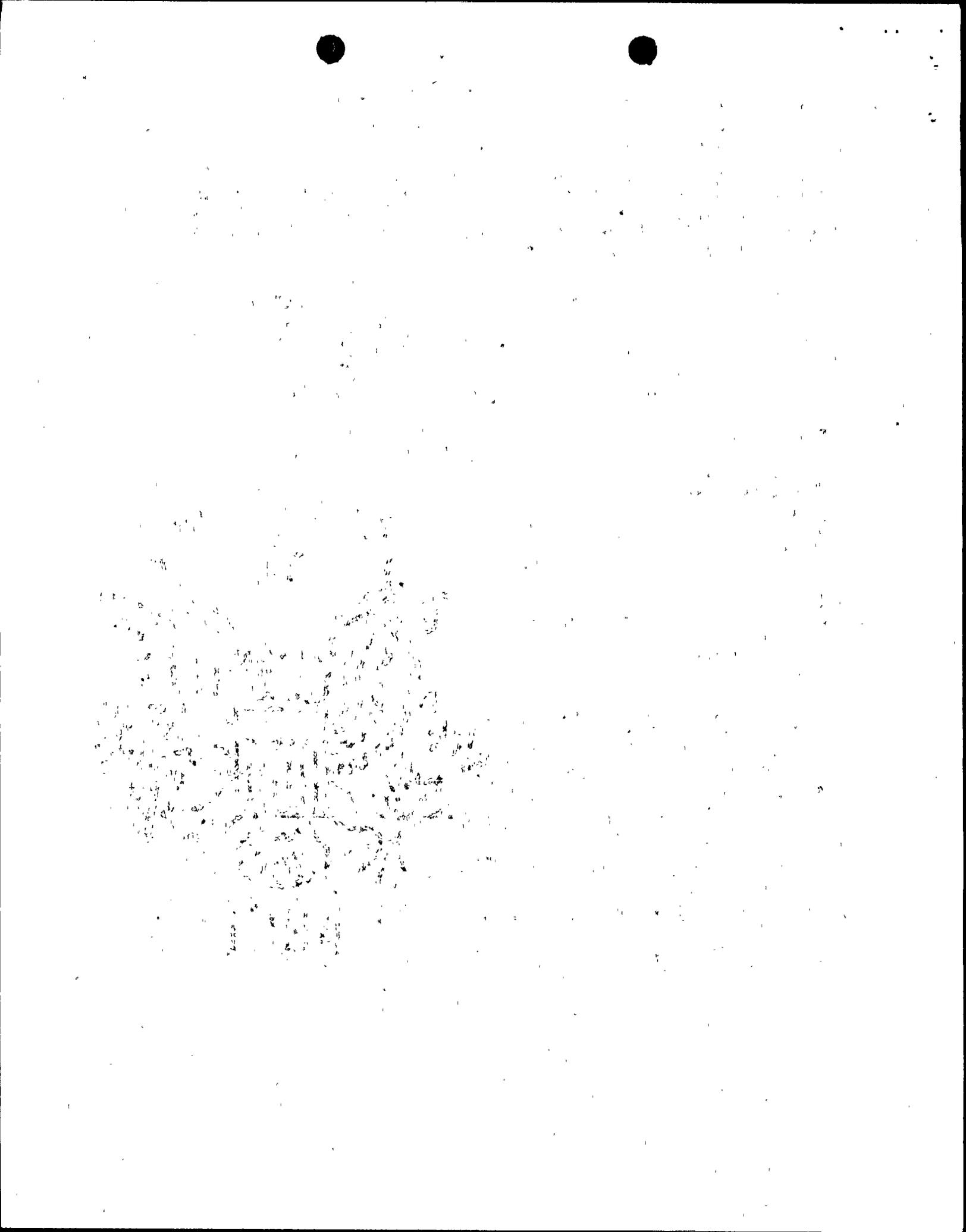
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Detailed Information Pertaining to the
Concerns of Ms. Betty Napier

Ms. Napier raised the following concerns: cutback of personnel, an apparent characterization of leakage of radioactive material into water as being slightly radioactive, and improper installation of safety valves. Additionally, Ms. Napier enclosed a newspaper article that reported reactor head and reactor coolant pump seal leakage. The newspaper article also mentioned past problems at the St. Lucie power plant involving faulty valves and the accidental release of 10,000 gallons of slightly radioactive water into its containment building. Ms. Napier expressed concern that the problems at the plant would have an impact on the public health and safety. Although in her letter Ms. Napier did not describe in detail all of the events at the plant that contributed to her concern about public health and safety, the U.S. Nuclear Regulatory Commission (NRC) staff could, with one exception, infer from her letter and the press article those events that were the most likely source of her concerns. The details of these events and NRC's assessment of them follow.

Regarding the exception noted above, Ms. Napier described an event reported in the press during which "at one point the reactor was within 3-7 pounds of a meltdown." Ms. Napier did not provide any further details of this event. The NRC staff reviewed recent events at the plant and could not identify any incident that may have threatened the integrity of the reactor core. The design of the plant, including redundant safety systems and multiple barriers to the release of radioactive material off site, minimizes the potential for such an event.

Regarding Ms. Napier's concern about a cutback of personnel, the licensee's personnel cutbacks have not involved personnel essential to operating the plant in a safe manner.

Power-Operated Relief Valves

The St. Lucie Unit 1 reactor coolant system design includes a pressurizer that acts as a free volume to accommodate water expansion for the control of reactor coolant system pressure. The design also includes safety valves that ensure that reactor coolant system pressure does not exceed design limits. To provide additional protection and to minimize the operation of the safety valves, power-operated relief valves (PORVs) are provided with lift setpoints that are set at a level that will prevent reactor pressure from reaching the setpoint of the safety valves. The PORVs and the safety valves discharge into a quench (collection) tank.

Enclosure 1

On August 9, 1995, during a required stroke test of the PORVs, operators could not confirm that the PORVs were opening as expected and, in accordance with the facility Technical Specifications, brought the plant to a cold shutdown condition. The licensee disassembled the PORVs and discovered that the main disc guide had been installed incorrectly. On the basis of its review of the maintenance process, the licensee attributed the root cause of this problem to personnel error on the part of contractor maintenance personnel who incorrectly assembled the PORVs after a major PORV maintenance activity and concluded that inadequate post-maintenance testing and inadequate inservice testing were two contributing factors. As part of its corrective actions, the licensee removed the PORVs, reassembled them correctly and tested them. In addition, post-maintenance and inservice test procedures were revised to improve the verification of proper valve operation.

Details of this event are described in NRC Inspection Report No. 50-335/95-16, dated September 8, 1995. On the basis of the inspection report findings, the NRC cited the licensee for a violation of its Technical Specifications and issued a civil penalty. This inspection report and other such reports discussed in this enclosure are available in the NRC Local Public Document Room located at the Indian River Junior College Library, 3209 Virginia Ave., Ft. Pierce, Florida 34954-9003.

Leaking Radioactive Water

Two events of significance involved the leakage of water containing relatively low concentrations of radioactivity. In both events, the leakage was collected on site and appropriately processed.

Shutdown Cooling Event:

On August 10, 1995, while the Unit 1 shutdown cooling system was being placed into service to support a plant cooldown, a relief valve lifted unexpectedly. The valve lifted and failed to reseat, until an operator intervened, resulting in a loss of approximately 4,000 gallons of water from the reactor coolant system, which accumulated in the watertight pipe tunnel area. The water was collected and appropriately processed. The NRC conducted a special inspection of this event and reviewed the licensee's root cause determination and immediate action in response to the event. The NRC's inspection results are documented in Inspection Report No. 50-335/95-020, dated December 19, 1995. On the basis of the NRC inspection as well as information provided by the licensee, the NRC issued a notice of violation. The NRC reviewed the licensee's subsequent corrective actions and found them to be acceptable.

Containment Spraydown Event:

The St. Lucie Unit 1 design includes a low pressure safety injection system and a containment spray system. During shutdown conditions, the two systems are cross-connected and share the shutdown cooling heat exchangers, which, remove heat from the reactor coolant system. During normal power operation, the two systems are isolated from one another.

During a plant startup on August 17, 1995, while the two systems were still cross-connected, operators initiated a normal venting procedure for the low pressure safety injection system. As part of the venting procedure, when the low pressure safety injection system was pressurized, an open flow path was inadvertently created from the low pressure safety injection system to a containment spray system header. A flow control valve in the containment spray system that is normally closed under these conditions and prevents flow into the containment spray system header was open, allowing water to flow from the refueling water tank and into the containment building. Operators were alerted by an annunciator indicating a high reactor cavity (sump) level and secured the low pressure safety injection system pump.

Approximately 10,000 gallons of water from the refueling water tank was transferred to the containment building during the event. The spray resulted in water containing relatively low concentrations of radioactivity inside the containment building but did not result in any leakage of radioactive material outside the building. This water was collected and appropriately processed.

During an inspection of the facility from July 30 to September 16, 1995 (Inspection Report No. 50-335/95-15, dated October 16, 1995), the NRC staff reviewed the licensee's corrective actions. The root cause of the containment spraydown event was a failure of the venting procedure to require a verification of the initial containment spray system valve lineup. The NRC staff determined that the licensee's corrective actions were adequate and that the licensee's inspection of containment following the event was comprehensive in scope and detail.

Reactor Coolant Pump Seal Failure

The reactor coolant pump design incorporates a seal assembly consisting of three primary seals and a fourth vapor seal on each of the four reactor coolant pumps. The function of the seal assembly is to ensure essentially zero leakage from the reactor coolant system along the pump shaft during normal operating conditions. Seal leakage is designed to flow into the volume control tank.

On August 2, 1995, while performing a Unit 1 heatup following Hurricane Erin, operators noted that the lower seal of one of the reactor coolant pumps was not working properly. After failed attempts to make the seal assembly function, operators observed that both the lower and middle seal stages had failed and the upper seal was degraded. Operators cooled and depressurized the unit and replaced the malfunctioning seal package. The NRC staff reviewed available information regarding reactor coolant pump seals and the attempts to make the seal assembly function and documented the results in NRC Inspection Report No. 50-335/95-15 dated October 16, 1995. The NRC concluded that the licensee's attempts to correct the problem with the lower seal caused further degradation of the seal assembly. Part of the increased leakage from the failed seals was retained in its collection system and the remaining portion was retained in the containment building. The leakage was collected and appropriately processed.

Reactor Head O-ring Failure

The reactor vessel closure head assembly is a flanged component bolted to the vessel by a number of threaded studs. The head flange is sealed to the vessel flange by two concentric O-rings, inner and outer, that ensure a leaktight interface between the reactor vessel head and the reactor vessel. Any time the reactor head is removed, new O-rings are installed to ensure a good seal. Leakage past the inner O-ring is detected by a leakoff line temperature detector, which will alarm in the control room. Such leakage is prevented from entering the containment atmosphere by the outer O-ring.

In early December 1995, while St. Lucie Unit 2 was being restarted after an outage, a small leak past the reactor vessel head inner O-ring was found. The unit was shut down and the seal repaired. The leakage was identified, collected as designed, and appropriately processed. Details of this occurrence are documented in NRC Inspection Report No. 50-335/95-22, dated February 5, 1996. The NRC identified deficiencies in the licensee's initial efforts to plan the repair activity. These deficiencies were acceptably resolved.