

U.S. NUCLEAR REGULATORY COMMISSION
Region III Office of Public Affairs
801 Warrenville Road, Lisle IL 60532-4351

NEWS ANNOUNCEMENT: RIII-96-69

November 22, 1996

CONTACT: Jan Strasma 630/829-9663
Angela Dauginas 630/829-9662
E-mail: opa3@nrc.gov

NRC ISSUES INSPECTION REPORTS ON TWO TEAM INSPECTIONS
AT CLINTON NUCLEAR POWER STATION

The Nuclear Regulatory Commission staff has issued reports on two team inspections reviewing plant operations at the Clinton Nuclear Power Plant as a result of a reactor shutdown which occurred September 5, 1996. The plant, operated by Illinois Power Company, is near Clinton, Illinois.

The plant was shut down because of the failure of a reactor recirculation pump seal. One NRC inspection team focused on the circumstances surrounding the shutdown, and the second team reviewed plant operations more broadly.

The NRC's letter to the utility transmitting the two reports is attached.

The full inspection reports are available for review on the NRC's internet web site. The web address for the reports is: <<http://www.nrc.gov/OPA/reports>>. Copies of the reports are also available by mail from the NRC Region III Office of Public Affairs.

* * * * *

November 19, 1996

John G. Cook
Senior Vice President
Illinois Power Company
500 South 27th Street
Decatur, IL 62525

Dear Mr. Cook:

On October 4, 1996, the NRC completed two inspections at your Clinton facility: a Special Inspection into the circumstances surrounding the September 5, 1996, recirculation pump seal package failure and an independently chartered Operational Safety Team Inspection (OSTI) which was initiated as a result of operator performance in the recirculation pump seal package failure event. The enclosures to this letter present the results of those inspections.

As will be discussed below, on September 5, 1996, the operations department put in motion a sequence of events which revealed significant deficiencies throughout the organization at the Clinton facility. These deficiencies included procedural adequacy and adherence problems, lack of rigor in conducting plant operations, and weak engineering support to operations. And, most significantly, the deficiencies included serious lapses in safety focus by both plant management and staff. It appears that plant management and staff made decisions which placed plant production ahead of plant operational safety. This matter is the subject of an ongoing Office of Investigations review.

Our review of the activities associated with the September 5, event, and additional confirmatory findings from the OSTI, identified a number of actions and practices which are inconsistent with procedural and programmatic controls for assuring safe operation of a nuclear power plant. These actions and practices were also evident in the April reactor scram when station management decided to maintain the unit in a hot standby condition, thereby minimizing down time. This decision resulted in degraded safety relief valves. In both events, actions necessary to place the unit in the safest, most stable condition were not taken. Further, the decision to maintain the unit in hot standby following the June reactor scram resulted in a lost opportunity to address the degrading "B" recirculation pump seal package.

Specifically during the September 5, event, operators were attempting to place the unit in single loop operation to allow continued unit operation by isolating a reactor coolant leak in the "B" reactor recirculation pump shaft seal package. While attempting to isolate the loop, seal pressure, temperature, and leak rate were not decreasing quickly enough to ensure continued unit operation. To increase the pump shaft seal's cool down rate and reduce leakage, shift supervision directed actions which were inconsistent with both Clinton procedures and vendor

recommendations for isolating the seal package. After this procedural noncompliance, seal leakage increased to greater than 5.0 gallons-per-minute, the technical specification (TS) allowable leakage rate. The shift crew entered the emergency plan, declared a Notice of Unusual Event, and made appropriate notifications.

The plant was now in a TS limiting condition for operation (LCO) which required reducing the leakage within four hours or shutting the plant down. Based on the four-hour limitation, additional procedural steps were not followed in another attempt to reduce the leakage to less than the TS limit to allow for continued unit operation. These activities exacerbated the seal condition resulting in a seal failure and leakage exceeding the installed instrumentation's ability to accurately monitor the leakage. The crew, although recognizing the seal failure, did not recognize the instrumentation's limitations. It was not until a relief Shift Technical Advisor arrived that leakage rates were properly calculated. Even though shift management was aware that these actions would further degrade the seals and was aware that a previous seal failure had resulted in leakage in excess of the criteria for declaring an Alert under the emergency plan, an Alert was not declared following all of the obvious indications that a seal failure had occurred.

After the seal package failed, shift supervision continued to delay commencing the reactor shutdown, maximizing the operating time and fully expecting the leakage to drop below the TS limit so that single loop operation could be maintained. Finally, four hours after the seal package failed (two hours after the LCO expired), with a leakage rate still greater than twice the TS limit, a briefing was held for the planned orderly shutdown of the unit. Plant shutdown continued to be inappropriately protracted with plant operation continuing to within 46 minutes of the 12-hour shutdown requirement being exceeded.

Throughout the event, operators' actions were complicated by preexisting equipment deficiencies. The originally installed leakage rate instrumentation has been a continuing problem at Clinton. A modification installed to provide similar information had its indication capped at 8 gallons-per-minute, well below the actual leakage achieved during the September 5 event. While providing leakage rates, the modification did not support continued leakage rate information or emergency classification assessments when most needed. Safety relief valves, cycled 85 times in the April event discussed earlier, were leaking and contributed to operators diverting their attention from the plant shutdown to enter an Emergency Operating Procedure to reduce suppression pool level.

Even after the unit was placed in a shutdown condition, the operations department still appeared to be driven by schedule pressures rather than conservative operating practices. For example, while placing the feedwater system in a cleanup mode, the operations department determined there was a need to expedite the cleanup rate and again operated equipment/components outside of procedural controls. This procedural non-compliance resulted in the spinning of the feedwater pump without oil to the bearings which could have caused serious damage to the pump.

Following the event, our observations indicated that the Clinton staff believed that the actions taken during the event were appropriate. The failures to follow procedures, inadequate procedures, operator performance issues, and inadequate management involvement were not promptly identified nor understood. It was not until the NRC had extensively intervened, through a number of calls with senior plant management over a period of several days that action was taken to initiate a thorough and comprehensive assessment. This commitment was formalized in our Confirmatory Action Letter dated

September 11, 1996. The initial assessment, while drawing appropriate overall conclusions, did not provide a solid basis for some of the conclusions. For example, while the initial assessment concluded that procedures were not followed, the detailed report indicated that procedural steps were followed, or a procedure deficiency existed, when in fact the problem was that procedural steps were not followed. Following subsequent discussions with the NRC, the Clinton staff's revised assessment corrected these issues.

In summary, our assessment of the recirculation pump seal package failure event identified three significant concerns. First, the operations department lacked an appropriate safety focus as exhibited by: (1) the failure to follow procedures in an extraordinary attempt to keep the unit in an operating condition, and (2) the protracted unit shutdown. Secondly, the failure to correct known material condition deficiencies that complicated operators' actions and responses indicated a lack of management sensitivity and priority to the removal of barriers affecting operator performance. Finally, the engineering department's support to operations was weak as exhibited by poor corrective actions for the original leakage instrumentation problems and the deficient compensatory modification.

While the examples differed, the same issues were independently confirmed during the OSTI. A number of problems with procedure adequacy and adherence were identified. Two cases of preconditioning for a diesel generator surveillance and an inadequate local leak rate test procedure were identified. The preconditioning is of concern because this could mask material condition issues affecting the operability of the diesel generators. Problems with procedure adherence were further exemplified by operators failing to follow the procedure for isolating spent fuel pool cooling and thereby allowing a 1000 gallon per day leak. In addition, when an operator was asked why they (operators) were having difficulty with a specific procedure, he responded that they were trying to do this the right way because the NRC was watching. This statement demonstrates a poor attitude toward and understanding the importance of procedure adherence.

The OSTI identified, through control room observations, a lack of management oversight and a full appreciation for the responsibilities held by licensed operators. At one point the "at the controls" operator left the designated control area without obtaining a relief. Short term relief turnovers were weak, and variations in crew communications and formality were observed. That these activities would occur during a major NRC

team inspection, with inspectors in the control room, indicates to us that these problems may be more widespread.

Engineering support to operations was weak and the engineers exhibited a weak safety focus. Engineering and operations on occasion conducted tests on facility systems with the reactor at power to identify potential impacts on safety systems. For example, cycled condensate was isolated from the residual heat removal system to determine the potential impact. This test resulted in the residual heat removal system being declared inoperable. These special tests did not receive the required safety evaluations (10 CFR 50.59) or site reviews for acceptability. Further, engineers indicated it was acceptable to perform actions by combining steps from disparate procedures without further review. Conducting unreviewed, unauthorized tests demonstrates a lack of a safety focus by engineers and licensed operators.

The OSTI also noted that often engineers seemed focused on finding a way to justify system operability rather than performing an in-depth evaluation and analysis demonstrating system operability and compliance with the FSAR. The operability evaluation program was poor with the process for operability evaluations not fully described. The Clinton staff did not know how many or what operational evaluations were in-place. Further, the staff had no mechanism of tracking evaluations. This is of significant concern to us because degraded plant equipment needs to be promptly evaluated to ensure appropriate safety margins are maintained.

Most of these significant issues described in this report including several apparent violations with multiple examples, were identified by the NRC, including: 12 examples of failing to follow procedures, 8 examples of inadequate/inappropriate procedures, 4 examples of failure to perform safety evaluations (10 CFR 50.59), two examples of inadequate corrective actions, an example of an operator leaving the "control" area without relief, and an example of operations management not performing appropriate administrative activities. The failure of the Clinton staff to recognize the significance of the issues identified and to promptly and appropriately respond to the them shows a lack of appreciation for the importance of adherence to NRC requirements.

Based on the results from the inspections and as noted above, several apparent violations of NRC requirements were identified and are being considered for escalated enforcement action in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600.

No Notice of violation is presently being issued for these inspection findings. In addition, the number and characterization of apparent violations described in the enclosed inspection reports may change as a result of further NRC review.

A pre-decisional enforcement conference to discuss these apparent violations will be scheduled. The decision to hold a pre-decisional enforcement conference does not mean that the NRC has determined that a violation has occurred or that enforcement action will be taken. The conference will be held to obtain information to enable the NRC to make an enforcement decision, including a common understanding of the facts and circumstances surrounding the violations, their root causes, your opportunities to identify the apparent violations sooner, your corrective actions, and the significance of the issues.

In addition, this is an opportunity for you to point out any errors in our inspection reports and for you to provide any information concerning your perspectives on 1) the severity of the violations; 2) the application of the factors that the NRC considers when it determines the amount of a civil penalty that may be assessed in accordance with Section VI.B.2 of the Enforcement Policy; and 3) any other application of the Enforcement Policy to this case, including the exercise of discretion in accordance with Section VII.

You will be advised by separate correspondence of the results of our deliberations on this manner. No response regarding these apparent violations is required at this time.

In accordance with 10 CFR 2.790 of the NRC's 'Rules of Practice,' a copy of this letter and its enclosures will be placed in the NRC Public Document Room (PDR).

Sincerely,

/s/A. Bill Beach

A. Bill Beach
Regional Administrator

Docket No. 50-461