ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-528/95-08
50-529/95-08
50-530/95-08

Licenses: NPF-41
NPF-51
NPF-74

Licensee: Arizona Public Service Company
P.O. Box 53999
Phoenix, Arizona

Facility Name: Palo Verde Nuclear Generating Station, Units 1, 2, and 3

Inspection At: Maricopa County, Tonopah, Arizona

Inspection Conducted: March 6-10, 1995

Inspectors: A. MacDougall, Resident Inspector
J. Keeton, Resident Inspector, South Texas Project

Approved: Howard J. Wong 4/25/95
H. Wong, Chief, Reactor Projects Branch F Date

Inspection Summary

Areas Inspected (Unit 2): Special, announced inspection of the circumstances regarding the identification of startup strainers in the Unit 2 containment spray (CS) suction piping.

Areas Inspected (Unit 1 and 3): Plant walkdowns were conducted to determine whether startup strainers were installed in the operating units.

Results (Unit 2):

Licensee Evaluation

- Overall the licensee's investigation of the failure to remove startup strainers was thorough and detailed. The NRC inspectors had minor comments related to the licensee's corrective actions.

Root Cause Evaluation

- While a root cause for why the Unit 2 CS startup strainers were not removed during initial plant startup in 1985 was not identified, the

licensee concluded that personnel error involving inattention to detail, lack of followup during issue closure, and lack of specific procedural guidance contributed to the error.

Previous Opportunities to Identify the Strainers

- The licensee's investigation identified two previous opportunities to identify that the strainers were still installed in the CS system: (1) in 1986, during the review of NRC Information Notice (IN) 85-96 concerning startup strainers, and (2) in 1993, during a review of an industry report concerning startup strainers found at Cooper station.

- An additional factor was that the licensing group, which was responsible for IN closures, did not independently assess the basis for closing the actions assigned to other organizations.

- The inspector noted that the licensee missed another opportunity to identify that the strainers were still in systems when making the decision to use a general note to plant drawings to show that the strainers had been removed rather than a more detailed design review process. Since the consequences of still having strainers installed in safety systems was potentially significant, a more prudent approach would have been to use the normal design change process and search for documentation showing that the strainers had been removed.

- A lack of questioning attitude was noted in each of the three missed opportunities. The emphasis of the individuals conducting each review appeared to be directed toward identifying why a detailed review was not required.

Operability Evaluation

- The licensee determined that the CS system was operable even with the startup strainers installed. This evaluation considered the potential for strainer clogging and seismic capability of the strainers.

Transportability of Strainer Issue to Other Systems

- The licensee conducted detailed system walkdowns, work order searches, and ultrasonic examinations of piping to verify that startup strainers were not installed in other systems. The scope and conduct of this evaluation was good.

- Of the safety significant systems, the licensee confirmed strainers in the suction piping of the A and B spent fuel pool cooling pumps of Units 1 and 3, the suction piping of the condensate transfer pumps in Unit 1, and the suction piping of the A and B CS pumps in Unit 2.

- The licensee determined that the strainers in the suction piping of the spent fuel pool cooling and condensate transfer pumps did not adversely impact operation of these systems.

Results (Units 1 and 3): Not applicable.

Summary of Inspection Findings:

- Violation 50-529/9508-01 was opened (Section 4.4).

Attachments:

- Attachment 1 - Persons Contacted and Exit Meeting
- Attachment 2 - Acronyms

DETAILS

1 SUMMARY OF EVENT

On February 17, 1995, while Unit 2 was defueled for a refueling outage, the licensee visually identified a startup strainer in the suction piping of the Train B CS pump during maintenance to repair a leaking pipe flange. The strainer should have been removed prior to initial power operations. The licensee recognized that the startup strainer was designed with a finer screen than that of the containment recirculation sump and could possibly clog during a design basis event. In addition, the screens were not designed to withstand a seismic event.

The licensee immediately began a review of maintenance documentation and identified that, with the exception of the Unit 2 CS pumps and the Unit 1 high pressure safety injection (HPSI) pumps, all the emergency core cooling system (ECCS) pumps had work orders that indicated the startup strainers were removed. The licensee inspected the exterior of the Unit 1 HPSI suction piping late on February 17. Based on this walkdown, the licensee confirmed that there did not appear to be startup strainers in the Unit 1 HPSI pump suction lines.

On February 18, the licensee performed an inspection of the Train A CS pump suction piping and found another startup strainer. On February 20, the licensee initiated walkdowns in all three units of the safety significant systems that had startup strainers installed during construction.

In response to this event, the licensee initiated a condition report/disposition request (CRDR) and formed a task team to conduct a Significant Condition Investigation. The team addressed the issues of root cause, previous opportunities to identify the strainers, system operability, transportability to the other units, reportability timeliness, and generic programmatic issues.

2 PURPOSE OF INSPECTION

The purpose of this special inspection was to review the circumstances of the failure to remove the startup strainers and to assess the licensee's investigation of the event.

The inspectors interviewed personnel involved in the investigation, reviewed work documentation, prints, and licensee correspondence, conducted plant walkdowns, and reviewed various procedures to determine how the strainers were left in the system, why they weren't discovered earlier, and if the CS system was operable with the strainers installed. The inspectors also performed an independent evaluation of the licensee's incident investigation.

3 ROOT CAUSE OF FAILURE INVESTIGATION

The licensee's root cause investigation included a review of historical documents used during the startup period, procedures, work documents, and personnel interviews.

The licensee determined that before a system was turned over to operations, a team of engineers performed system walkdowns and reviewed documentation to identify any potential problems. Any issues identified during these walkdowns were prioritized and tracked in the Master Tracking System (MTS). The MTS for the Unit 2 CS system did not include any open issues concerning the startup strainers. The licensee also found that there was not any work orders to remove the Unit 2 startup strainers.

While the licensee could not find the root cause for why the Unit 2 CS startup strainers were not removed, the licensee concluded that there were several contributing factors: personnel error involving inattention to detail; lack of followup during issue closure; and lack of specific procedural guidance. The licensee also noted that the MTS is no longer used and that processes in place during plant startup were unique to that time period and do not represent the current plant processes.

The inspector reviewed the licensee's root cause investigation and agreed that the definitive root cause could not be identified and that no meaningful corrective actions could be implemented on a process which no longer exists.

4 PREVIOUS OPPORTUNITIES TO IDENTIFY THE STARTUP STRAINERS

The licensee's investigation identified two previous opportunities to identify that the strainers were still installed in the CS system. The licensee attributed the failure to identify the problem during these reviews to personnel errors (inadequate system walkdowns and review of records) and an inadequate configuration control program (lack of clear and consistent drawing information).

The inspector reviewed the licensee's investigation and concluded that during a review of plant piping and instrumentation drawings (P&IDs), the licensee had another opportunity to identify that the strainers were still installed. These issues are discussed below.

4.1 IN 85-96 Review

The NRC issued IN 85-96 in December 1985 to alert licensees about temporary construction strainers being left installed in the suction piping of safety-related pumps.

The inspector reviewed the licensee's file concerning the review of the IN and noted that the licensing group was responsible for reviewing INs. The licensing group received the IN in January 1986 and apparently issued an

action item for both the maintenance standards group and the operations engineering group. The licensee's resolution of these actions is outlined below.

4.1.1 Maintenance Standards Response

The inspector noted that the licensing group asked the maintenance standards group to review the processes that would ensure strainers were not left in the safety-related systems during startup. The inspector noted that the IN file did not include a response from the maintenance standards group. The licensee determined in their investigation that this action was closed based on the fact that the procedure for the control of work would require a work order to remove any strainers. However, the maintenance group did not review any work orders to verify that the work order process was used to actually remove any startup strainers. The licensing group apparently accepted the response from the maintenance group and closed the action.

4.1.2 Operations Engineering Response

In 1987, the operations engineering group identified several discrepancies between the key drawings (P&IDs), scoping drawings (portions of system drawings used during startup), and the equipment index for startup strainers. In April 1987, Bechtel updated the drawings and equipment index to indicate the correct type of strainers. The inspector reviewed the correspondence between Bechtel and APS and could not determine what was used as the basis for changing the prints and equipment qualification index. In a letter to APS dated January 12, 1987, discussing the drawing changes, Bechtel stated that the only way to verify the as-built configuration and ensure that all the startup strainers had been removed was to conduct 100 percent system walkdowns.

The supervisor of the operations engineering group closed an internal tracking item from the licensing group concerning IN 85-96 in a September 1988 letter to file. The letter referenced the Bechtel letter recommending that system walkdowns should be performed to verify that all the startup strainers were removed. The letter stated that these walkdowns were conducted between June and September of 1987 and that operations engineering was satisfied that all the temporary startup strainers were "accounted for." Based on these walkdowns, the action from the licensing group concerning the IN was closed.

The inspector noted that there was not any other documentation concerning how the walkdowns were performed, what the acceptance criteria was, and if any discrepancies were found. The licensee interviewed numerous engineers that may have been involved and could not determine any specific information concerning these walkdowns.

4.1.3 Conclusions

The inspector concluded that the licensee performed inadequate walkdowns and documentation review during the review of IN 85-96. The inspector also noted

that the licensing group, who was responsible for IN closures, did not independently assess the basis for closing the actions assigned to the maintenance standards group and operations engineering.

4.2 Review of Operating Event Report

In January 1993, Operating Event Report (OER) 5904 was issued informing the industry of an event at Cooper Station where startup strainers were identified in the suction piping of several safety-related pumps. The startup strainers were thought to be spacers because they did not have the tabs typically used to identify strainers. The industry OER suggested that utilities reassess the adequacy of their response to IN 85-96 to ensure that both tabbed and untabbed startup strainers were identified and either removed or evaluated.

In April 1993, the licensee's Nuclear Industry Affairs (NIA) group sent a message describing the Cooper OER to several Palo Verde managers. The Executive Vice President, Nuclear, responded to the message and asked NIA to reassess Palo Verde's response to IN 85-96 and determine if closure was complete and accurate. NIA performed an initial document review and noted that in February 1993 a startup strainer was found in the Unit 3 chemical and volume control system (CVCS). Based on this initial review, NIA determined that there was the potential that additional strainers were still installed in other systems and asked engineering to perform an independent review of the issue.

The inspector reviewed the CRDR that evaluated the strainer found in the CVCS. In the CRDR, the licensee determined that most of the P&IDs still showed the startup strainers but had a note stating that the strainers had been removed. However, there was not a note stating that the strainer installed in the CVCS had been removed. Engineering subsequently concluded that there was no discrepancy related to the CVCS strainer in that the CVCS print was accurate since it showed the strainer installed in the location where it was found.

In July 1993, engineering responded to NIA and closed the action to assess the adequacy of the response to IN 85-96. The inspector reviewed the response and had the following observations:

- Engineering was overly focused on the fact that the CVCS strainer was left in place after construction and that the prints appeared to accurately reflect this configuration. Based on only one point of reference, engineering subsequently made a broad conclusion that all the prints were accurate.

- Engineering did not address the concern in the OER about the potential for strainers without tabs being installed in safety systems that were not previously identified.

- Engineering justified that an additional review was not necessary based on an assumption that the system walkdowns were adequately performed in

1987. Engineering did not challenge this assumption even though they were asked to determine the adequacy of IN response.

- The NIA group did not challenge the fact that the justification provided by engineering for closing the OER did not address the tabbed vs untabbed issue identified in the OER.

4.3 Drawing Change

In 1993, during the design basis project review, engineers noted that startup strainers were still shown on the P&IDs. The engineers assumed that all startup strainers were verified to be removed based on the system walkdowns performed in 1987 during the review of IN 85-96. As a result, general revisions (GR) were performed to the P&IDs for all three units to add a note stating that the strainers were removed. The inspector conducted a review to determine why the strainers were not removed from the drawings and if the GR to add the note was appropriate.

The inspector noted that in 1987 the licensee made a decision to leave the strainers on the P&IDs to provide a future reference of strainer locations. The strainers were supposed to be removed from the working level drawings, or scoping drawings, as they were removed from the plant. Since the P&IDs were not updated, the as-built configuration of the plant was not reflected on the P&IDs.

In 1993, a GR was made to the system P&IDs that still showed startup strainers installed to add the following note: "This is the location of startup strainer if required. These strainers have been removed for normal operation." The inspector reviewed the procedure for changing drawings and noted that a GR was allowed for "inconsequential editorial comments." The inspector discussed the use of the GR clause with members of the design engineering staff to determine why they chose to use the GR and not remove the strainers from the P&IDs.

The inspector was informed that the decision to add the note was based on an assumption that plant walkdowns were performed in 1987 that verified all the strainers were removed. As a result, the design engineers reasoned that adding the note was an "inconsequential editorial comment" because the strainers had already been removed.

The inspector had the following observations concerning the use of the GR process to add the note:

- The design engineering group's conclusion that adding the note was an "inconsequential editorial comment" was again based on an assumption that the strainers had already been removed. However, adding the note turned out to be invalid because some strainers were still installed.

- The normal design change process requires documentation, such as a work order, to remove components from the drawings. Adding the note essentially removed the strainers from the drawings without the need for specific documentation.

The inspector concluded that the licensee missed another opportunity to identify that the strainers were still in the CS system when deciding to use the GR provision to show that the strainers had been removed. Since the consequences of still having strainers installed in safety systems was potentially significant, a more prudent approach would have been to use the normal design change process and search for documentation showing that the strainers had been removed.

The licensee agreed that they used poor judgement when they decided to leave the strainers on the P&IDs and use the GR to add the note stating they were removed. The licensee subsequently decided to remove the startup strainers from the drawings. The design engineering group also had an action to reduce the backlog of drawing change requests and to ensure that new changes were incorporated in a timely manner (approximately 90 days). The inspector concluded that these actions were appropriate.

4.4 Summary

The inspector concluded that the licensee had three distinct opportunities to identify that startup strainers were still installed and failed to take appropriate corrective actions. These examples are a violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the failure to identify a nonconforming condition that was adverse to quality (Violation 50-529/9508-01).

The inspector noted the following weaknesses common to each of the opportunities to identify the stainers:

- There was a lack of questioning attitude during all three reviews. The emphasis of the individuals conducting the review appeared to be on justifying why a detailed review was not required.

- Based on the potential safety significance of startup strainers still installed in systems, the emphasis of these reviews should have been on gathering data to independently prove there were no startup strainers still in the plant. This type of review would have required specific information to support the belief that system walkdowns were completed, to ask for clarification of what "accounted for" meant during closeout of the IN, and to find specific documentation to add the note to the P&IDs.

- The IN and OER review and closeout processes were weak. There was an overall lack of rigor in the closeout reviews. The processes did not

ensure an appropriate level of management review and input to the closeout process.

4.5 Licensee Response to Past Corrective Actions Problems

In 1994, the NRC identified significant weaknesses in the licensee's corrective actions to several safety-significant issues. Based on these issues and the licensee's own findings, the licensee initiated several changes to the corrective actions program. In the later part of 1994, the licensee made several changes to their corrective action program which included improvements to the CRDR process and CRDR form, the formation of a CRDR review team, and scheduling corrective action audits to review the adequacy of corrective actions.

In 1994, the licensee recognized that improvements were also required in the IN and OER review process. As a result, the industry operation experience group was realigned under the Nuclear Assurance organization. Additionally, the licensee recently decided to require the initiation of a "quality" or Q CRDR to raise the level of rigor involved in the review and closeout of INs and OERs.

In response to several issues regarding lack of thorough engineering reviews, engineering management implemented a "level 1" issue resolution program which has included training on the attributes of "engineering excellence." Engineering has also been reviewing the adequacy of older evaluations to ensure that the corrective actions were appropriate and the issue was completely resolved.

As a result of these corrective actions there has been an overall improvement in the licensee's response to issues. However, the inspector concluded that the licensee's failure to identify the strainers with three separate opportunities to identify the strainers demonstrated that additional attention was warranted to develop a problem solving culture throughout the organization that would ensure safety significant issues get properly resolved the first time.

5 OPERABILITY EVALUATION

5.1 Safety Significance

The CS system was designed to satisfy General Design Criterion 38 which requires two independent subsystems to provide adequate CS flow to keep containment pressure and temperature below design conditions for any size reactor coolant system line break up to and including the design basis loss of coolant accident.

With the possibility of material passing through the recirculation sump screens and clogging the slightly finer startup strainers, finding startup strainers in the suction of the CS pumps constituted discovery of an unanalyzed condition that was outside the design basis for Palo Verde Unit 2.

The following sections outline the licensee's evaluations that were conducted to determine whether the strainers would have prevented the CS system from performing its safety function.

5.2 Strainer Blockage or Seismic Failure

The licensee evaluated the potential for strainer blockage by reviewing Calculation 13-MC-SI-309, "Emergency Sump Screen Blockage," which was performed in 1992. At that time, the licensee performed detailed calculations of the types and amounts of debris available in containment to show that the containment sumps would be available during the recirculation phase of any postulated accident. The licensee compared the size of the openings in the containment sumps to the size of the openings in the strainers and determined that a very narrow range of particle sizes (from 0.09 inch to 0.056 inch) would have been able to block the strainer. The licensee concluded that the amount of fibrous or failed coating capable of being transported to the sump area is small based on the low flow velocity going to the containment sump. Therefore, the licensee concluded that startup strainer blockage from accident generated debris was very unlikely.

The licensee performed calculations to determine whether a seismic event could cause failure of the strainers or a failure of the CS system due to the presence of the strainer. The licensee concluded that the strainers were conservatively designed and that a seismic event would not cause failure of the strainer or the CS system.

The licensee compared the CS full flow inservice test data to determine if the existence of strainers caused suction head degradation or reduced the flow capability of the system. The data from the Unit 2 CS pumps was compared to the data from the CS pumps of other two units and there was no notable difference in the flows or differential pressures between any of the six pumps. The licensee subsequently concluded that the presence of the strainers had no effect on availability of the CS system in Unit 2.

5.3 Operator Actions

In the evaluations of possible strainer clogging, the licensee made the conservative assumption that the CS system would eventually become unavailable. The licensee reviewed the emergency operating procedures (EOPs) and verified that they included actions to mitigate the consequences of a loss of CS. Specifically, the EOPs required operators to verify at least 3900 gpm CS flow when CS actuates. If that flow rate could not be achieved or maintained, the operators were directed to enter the functional recovery procedures and align a low pressure safety injection pump (LPSI) to provide CS flow.

The inspector reviewed the EOPs and confirmed that adequate instructions existed to monitor CS flow for possible degradation and that actions were specified for the loss of all CS flow.

5.4 Conclusions

The CS system was determined to be operable even with the startup strainers installed. To arrive at this determination, the evaluations of the licensee were detailed and exhaustive. The inspector reviewed the information that was used to make the operability determination and agreed that the CS system was operable even with the startup strainers installed. The scope and depth of the analysis performed was judged to be adequate to make the determination.

6 TRANSPORTABILITY

6.1 Transportability to other Units

After identifying the strainers in the Unit 2 CS system, the licensee immediately focused on assessing whether there were any startup strainers in the ECCS pump suction piping for the operating units (Units 1 and 3). A work order search was conducted for the Unit 1 and 3 HPSI, LPSI, and CS pumps which found that the strainers were documented to be removed for all these pumps, except the Unit 1 HPSI pumps.

On the evening of February 17, the licensee conducted a walkdown of the Unit 1 HPSI suction piping and found that the spacer installed in the location where a strainer would be installed did not have the tabs typically found on the strainers. Lifting tabs were typically attached to the flange of the startup strainer and were not found on the spacers that should have been inserted to replace the strainers. Based on this observation, the licensee confirmed that there were no other strainers in the suction of the operating units ECCS pumps.

The resident inspectors had several discussions with the licensee concerning their evaluation and agreed with the licensee's initial assessment. The inspectors also concluded that the licensee's initial response was prompt and thorough.

6.2 Transportability to Other Systems

The licensee conducted a review of the P&IDs and historical documentation from Bechtel to determine the location of strainers in other systems. The licensee initially focused on several safety significant systems: safety injection system (LPSI, HPSI, and CS pumps); auxiliary feedwater system (turbine driven, motor driven, and nonclass motor driven pumps), essential chilled water system pumps; CVCS (charging pumps A, B, and E, boric acid makeup pumps, and reactor water makeup pumps); essential cooling water system pumps; spent fuel pool cooling (PC) system pumps; and the condensate transfer system pumps.

The licensee used physical walkdowns/inspections and work order searches to determine to whether startup strainers were left installed. The licensee concluded that a strainer was not installed if there was a positive identification of a spacer ring inscribed on the spacer or on a tag attached to the spacer that was shown on the isometric drawings. The licensee

subsequently performed an ultrasonic test of the piping to verify the absence of a strainer if they could not positively identify a spacer.

Of the safety significant systems, the licensee confirmed strainers in the following locations:

Unit 1

- PC pumps A & B suction piping
- Condensate transfer (CT) pumps A & B suction piping

Unit 2

- CS pumps A & B suction piping

Unit 3

- PC pumps A & B suction piping

The licensee planned to conduct walkdowns of priority two systems (those systems important to production such as plant cooling water) and priority three systems (other nonsignificant systems such as auxiliary steam). Initial walkdowns of the priority 2 systems were in progress and an action plan for completing the priority 3 systems was to be completed by June 1, 1995.

The inspector reviewed the licensee's evaluation to determine the scope of the system verifications, performed independent reviews of work orders and system drawings to confirm the presence of spacers, and conducted walkdowns of the safety significant systems. The inspector concluded that the scope of the licensee's investigation was good in that it was appropriately focused toward, but not limited to, safety significant systems. The inspector also noted that the licensee's process to verify the absence of strainers was sound and thorough.

6.2.1 PC and CT System Operability Evaluation

The licensee conducted an evaluation of PC and CT system functionality with the strainers installed and determined that performance of these systems would not have been degraded due to the presence of the strainers.

The PC system is not an emergency safeguards features sub-system and is not under the plant Technical Specifications (TS). In the event of a loss of PC, there are procedures in place to supply backup cooling in sufficient time to prevent boiling in the spent fuel pool. The licensee concluded that there would not be enough debris generated to potentially clog the PC pump suction strainer. This conclusion was based on the fact that the PC cleanup system was designed to remove any debris that may enter the spent fuel pool during refueling operations. Additionally, the spent fuel pool was a controlled zone which would minimize the accidental introduction of any debris.

The CT system maintains proper condensate inventory control in the secondary system by providing or accepting condensate upon demand. The CT pumps transfer condensate inventory from the condensate storage tank to provide emergency makeup to various closed loop systems. The CT pumps are not under the plant TS. The licensee concluded that since the CT system was a closed system there was not a mechanism for debris accumulation on the CT pump strainers.

The inspector reviewed the licensee's evaluation of PC and CT system operability with the strainers installed and agreed with the licensee's conclusion that the strainers did not impact the operation of these systems.

6.3 Transportability to other Components

The licensee also evaluated the potential for other devices used during startup which may have remained installed after the units became operational. The licensee conducted an industry event search and found examples where check valves, flow orifices, safety relief valves, snubbers, and spring cans had been altered during startup testing and were not returned to the design configuration.

The licensee did not find any examples at Palo Verde where these types of components were not restored to the design condition after startup. The licensee also noted that the surveillance tests conducted as part of the ASME inservice test and inspection programs were designed to identify and correct problems with these types of components. The licensee concluded that there was a high level of confidence that no other startup devices remained installed in safety-related systems based on the historical effectiveness of the ASME inservice test and inspection programs at Palo Verde.

The licensee noted that there was some risk assumed by not conducting plant walkdowns to look for additional startup devices. However, the licensee believed this risk was low and did not warrant a 100 percent field verification.

The inspector reviewed the licensee's investigation and agreed with the licensee's conclusion that a 100 percent system walkdown for additional startup devices was not warranted. However, the inspector noted that system engineers, maintenance engineers, operators, and management all conduct tours and periodic walkdowns of systems to identify discrepancies. The inspector noted that these individuals could be briefed on what types of configuration problems were easily identified during these walkdowns, e.g., the existence of tabs on startup strainers. The inspector noted that this type of training may have enabled an individual to notice the tabs on the CT pump suction piping and question whether a startup strainer was installed.

At the exit meeting, the licensee agreed to discuss this event and the visual indications of installed startup devices during industry event training. Additionally, the Director of System Engineering agreed to evaluate updating

the system engineer checklists to include potential startup devices. The inspector concluded that these additional actions were appropriate.

7 STARTUP STRAINER DISCOVERY

On February 17, the licensee initiated a CRDR to evaluate the discovery of the startup strainer in the Unit 2 CS Pump B suction line. Appropriately, the licensee's initial focus during the evaluation was to determine if there were any startup strainers in the suction piping of the operating units' ECCS pumps (Units 1 and 3). Because Unit 2 was shutdown, the shift supervisor did not initially consider the condition in Unit 2 to be reportable.

On February 18, another strainer was found in the suction of Unit 2 CS Pump A. On February 19, based on questions by the resident inspector, the licensee subsequently determined that a 4-hour report should have been made because, had the strainers been discovered in an operating unit, they would have had to enter TS Action 3.0.3 and shut down. On February 20, notification was made under 10 CFR 50.72(b)(2)(iii)(D). The actual safety significance of the late event report was minimal in that the licensee had discussions on the initial discovery of the strainers and kept the NRC informed of the status of its investigation.

The inspector noted that the licensee had previously identified problems in the reportability determination process during a corrective action audit in December 1994. The inspector noted that the response included an action to develop reportability training for operators by March 17. The inspector concluded that the licensee missed an opportunity to prevent the late notification of the strainers by not providing the operators with interim training on reportability requirements.

As part of their incident investigation, the licensee conducted an investigation of the failure to provide a timely report of the identification of the strainers. The licensee identified several corrective actions, including formal classroom and simulator training on the event reporting manual and 10 CFR 50.72 requirements for the licensed operators, training for the Nuclear Regulatory Affairs personnel on the event reporting manual and 10 CFR 50.72 requirements, and revising the CRDR form to add a tickler question for shift supervisors regarding reportability.

The inspector concluded that these additional corrective actions were appropriate. The inspector also noted that the licensee issued a night order on March 9 that discussed the operator weaknesses concerning reportability and the proposed corrective actions.

8 EVALUATION OF LICENSEE'S INVESTIGATION

In response to this event, the licensee initiated CRDR 2-5-096 and formed a task team to conduct a Significant Condition Investigation. The team had appropriate representation from the operations, maintenance, and engineering

organizations and direct oversight was provided by senior management. The inspector attended several of the team meetings and reviewed the investigation report.

The inspector concluded that: the licensee conducted an exhaustive effort to determine the root cause of leaving the strainers installed; the licensee's response to transportability to other systems was very good; and the licensee's evaluations supporting the operability determination were thorough and clearly demonstrated operability of the CS system.

Overall, the inspectors concluded that the licensee performed a very good investigation of the event. They covered all the major issues and provided the appropriate level of effort in the safety significant areas.

While the inspectors generally agreed with the licensee's assessment of the event, the inspectors provided some minor comments.

ATTACHMENT 1

1 PERSONS CONTACTED

1.1 Arizona Public Service Company

J. Brown, Engineer, Nuclear Engineering Department, Mechanical
K. Chavet, Sr. Engineer, Nuclear Assurance Strategic
B. Ecklund, Section Leader, Nuclear Assurance Strategic
D. Garchow, Director, Site Engineering
B. Grabo, Section Leader Compliance, Nuclear Regulatory Affairs
J. Hesser, Director, Engineering
W. Ide, Director, Operations
D. Kanitz, Sr. Engineer, Nuclear Regulatory Affairs
A. Krainik, Department Leader, Nuclear Regulatory Affairs
T. Matlock, Investigator, Nuclear Assurance
M. Radspinner, Section Leader, Design Mechanical NSSS
C. Russo, Department Leader - NAM, Nuclear Assurance
G. Shanker, Department Leader, Nuclear Assurance Engineer
W. Simko, Department Leader, Nuclear Assurance
R. Stroud, Regulatory Consultant, Nuclear Regulatory Affairs
S. Troisi, Department Leader, Investigation Leader

1.2 NRC Personnel

K. Johnston, Senior Resident Inspector
J. Keeton, Resident Inspector, South Texas Plant
A. MacDougall, Resident Inspector
H. Wong, Branch Chief

1.3 Others

J. Draper, Site Representative, Southern California Edison
R. Henry, Salt River Project Site Representative
F. Gowers, Site Representative, El Paso Electric

All personnel listed above attended the exit meeting held on March 10, 1995.

2 EXIT MEETING

An exit meeting was conducted on March 10, 1995. During this meeting, the inspectors summarized the scope and findings of the report. The licensee acknowledged the inspection findings documented in this report. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspectors.

ATTACHMENT 2

ACRONYMS

CS	containment spray
CT	condensate transfer
CVCS	chemical and volume control system
CRDR	condition report/disposition request
ECCS	emergency core cooling system
EOP	emergency operating procedures
GR	general revisions
HPSI	high pressure safety injection
IN	information notice
LPSI	low pressure safety injection
MTS	master tracking system
NA	nuclear assurance
NIA	Nuclear Industry Affairs
OER	operating event report
PC	spent fuel pool cooling
P&ID	piping and instrumentation drawings
TS	Technical Specification