U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-346
License No:	NPF-3
Report No:	50-346/97015(DRP)
Licensee:	Toledo Edison Company
Facility:	Davis-Besse Nuclear Power Station
Location:	5503 N. State Route 2 Oak Harbor, OH 43449
Dates:	November 10, 1997 - January 7, 1998
Inspectors:	S. J. Campbell, Senior Resident Inspector K. S. Zellers, Resident Inspector
Approved by:	Thomas J. Kozak, Chief, Reactor Projects Branch 4

EXECUTIVE SUMMARY

Davis-Besse Nuclear Power Station
NRC Inspection Report No. 50-346/97015(DRP)

This inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers an eight-week period of resident inspection.

Operations

- Operations activities were conducted in a controlled, conservative manner. Shift briefs were thorough, operators had good knowledge of plant status and activities, and procedures were consistently complied with. Plant management was aware of and responded to operational issues in an appropriate manner (Section O1.1).

- A reactor operator missed noticing that the computer display for Group 38, which indicates reactor core nuclear parameters and calculates secondary heat balance power, did not update for a 50-minute period because he became distracted with a problem on the Nuclear Operations Management System (Section O1.2).

- The inspectors observed that the operators maintained good control of the plant during a failure of the servo control valve for Turbine Control Valve No. 4 (Section O1.3).

- Valve line-ups and major flow paths for both engineered safety features and important-to-safety systems were verified to be consistent with plant procedures/drawings and the Updated Safety Analysis Report (USAR) (Section O2.1).

Maintenance

- The licensee removed from service the level controller for both the Train 1 Auxiliary Feed Pump and the Motor Driven Feed Pump for a maintenance outage. The inspectors determined that operations work control personnel were knowledgeable of the maintenance rule requirements associated with this work, and that risk was appropriately considered in the planning stages (Section M1.1).

- Equipment was observed to perform as described by the USAR during surveillance testing. During surveillance tests, operators were observed using self-checking techniques for procedural steps before performing them. During the tests, operators followed procedural requirements and were attentive to operating equipment performance (Section M1.2).

Engineering

- Plant engineering personnel missed an opportunity to predict a turbine control valve servo control valve failure. They were not aggressive in responding to a 30 megawatt load swing that had occurred the week before. Further, they did not gather and assess available information regarding the slow response of the turbine control valve found during previous testing. Consequently, the licensee reacted to the issue rather than managed it. Once the failure occurred, the plant engineering organization responded well (Section E2.1).

- Station Review Board members displayed good technical knowledge of the subject matter presented to them. Members solicited feedback from the sponsors of the documentation that was reviewed. The members requested additional information be provided when clarification or explanation was needed (Section E7).

Plant Support

- A thorough ALARA briefing was conducted for a containment entry to perform reactor coolant pump upper thrust bearing resistance temperature detector circuit modifications. General area radiation dose rate estimates closely matched those actually found in containment. Radiation protection personnel provided excellent assistance and support for the entry team. Total dose received for the entry was low at about 10 millirem (Section R1.1).

- The licensee's response to smoke from a faulted electrical generator for the elevator machinery room in the radiological restricted area (RRA) was done in accordance with plant procedures. The operators appropriately staffed the brigade, donned proper fire protection equipment and established good communication with control room personnel. Following the event, the licensee appropriately initiated potential condition adverse to quality reports (PCAQRs) to document concerns regarding difficulty of personnel exiting the RRA due to smoke (Section F1.1).

- The inspectors found that surveillance procedures for smoke detectors installed in ventilation ducts were not written in accordance with the vendor's technical manual recommendations. Although the detectors were not required by 10 CFR Part 50, Appendix R, the licensee failed to meet management's expectations because a PCAQR was not initially written to document this inconsistency until prompted by the inspectors (Section F2.1).

Report Details

Summary of Plant Status

The unit operated at nearly full power throughout the inspection period. Power was briefly reduced to about 90 percent on November 17, 1997, to repair a failed servo valve to Turbine Control Valve No. 4 (Section E2.1).

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

The inspectors observed that the plant was operated in a controlled, conservative manner and that management appropriately responded to operational issues. Operators conducted thorough shift turnovers, and were cognizant of evolutions in progress. Overall, the operators exhibited good knowledge of plant equipment status and properly utilized plant operating procedures. Specific events and noteworthy observations are detailed in the sections below.

O1.2 Reactor Operator Distracted from Monitoring Plant Parameters

a. Inspection Scope (71707)

During a review of control room logs, the inspectors learned that the computer display for Group 38 had not updated for a 50-minute period on November 15, 1997. The inspectors reviewed the circumstances surrounding the failure of the display and interviewed operators to determine why there was a delay in their recognition of the failure.

b. Observations and Findings

The computer display for Group 38 is in front of the primary reactor operator station and provides information on core parameters (nuclear power, secondary heat balance power, quadrant power tilt, rod index, etc.). This information is normally automatically updated every six minutes and licensee management expectations are that this information be monitored by the operators when it is updated. There is no direct indication to operators when Group 38 fails; rather, a comparison of the information to real time data is needed to identify a failure has occurred.

In discussions with the control room operator who made the log entry, the inspectors determined that he had been diverted to a problem with the Nuclear Operations Management System and had not noticed that Group 38 had ceased updating. The inspectors discussed this issue with operations management and found that management expected that the operator be attentive to this display.

Subsequently, operations management issued a memorandum to the operators clarifying this expectation. This problem did not result in an adverse impact on plant operations.

c. Conclusions

The inspectors concluded that, while operators normally were attentive to the control room panels and plant conditions, a distraction in the control room led to an operator's failure to recognize that Group 38 had ceased updating for 50 minutes.

O1.3 Turbine Control Valve No. 4 Servo Control Valve Failure (71707)

On November 17, 1997, the servo valve for Turbine Control Valve No. 4 failed and caused plant power to slightly decrease. The inspectors observed that the operators maintained good control of plant parameters during the transient. Shift briefs were periodically held at appropriate times to discuss the status of the plant and planned troubleshooting activities for repair of the servo valve (See Section E2.1 for details on the servo valve failure). The inspectors concluded that the operators responded well to this minor plant transient.

O2 Operational Status of Facilities and Equipment

O2.1 Engineered Safety Feature System Walkdowns (71707)

The inspectors walked down the accessible portions of the following engineered safety features (ESF) and important-to-safety systems during the inspection period:

- Emergency Diesel Generators Nos. 1 and 2
- Low Pressure Injection Trains 1 and 2
- High Pressure Injection Trains 1 and 2
- Containment Spray Trains 1 and 2

System lineups and major flowpaths were verified to be consistent with plant procedures/drawings and the Updated Safety Analysis Report (USAR). Pump/motor fluid levels were within their normal bands. Vibration and temperatures of running equipment were normal. Only very minor oil and fluid leaks were noted on occasion. Local and remote controllers were properly positioned and instrumentation appeared to be functioning correctly. No substantive concerns were identified as a result of the walkdowns.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Feedwater System Outages (62707)

The licensee removed from service the level controller for both the Train 1 Auxiliary Feed Pump and the Motor Driven Feed Pump for a maintenance outage. The inspectors determined that operations work control personnel were knowledgeable of the maintenance rule requirements associated with this work and that risk was appropriately considered in the planning stages.

M1.2 Maintenance and Surveillance Activities (61726)(62707)

The following maintenance and surveillance testing activities were observed/reviewed during the inspection period:

DB-SC-03070	Emergency Diesel Generator No. 1 Monthly
DB-SS-03042	Control Room Emergency Ventilation Train 2 Monthly Test
MWO-1-97-0750-00	Install Temporary Mod 97-0010 for RCP 2-1 Upthrust Bearing Spare Thermocouple
MWO-1-97-0760-00	Install Temporary Mod 97-0010 for RCP 2-2 Upthrust Bearing Spare Thermocouple

Equipment was observed to perform as described by the USAR and within the precautions and limitations of their operating procedures. Additionally, support equipment was verified to be performing as required. Operators were observed using self-checking techniques before performing procedure steps during surveillance tests and diligently following procedure requirements. The inspectors concluded that these maintenance and surveillance testing activities were thoroughly and professionally conducted.

M3 Maintenance Procedures and Documentation

M3.1 Post Maintenance Testing for Class 1E Undervoltage Relays

a. Inspection Scope (61726)

The inspectors reviewed licensee activities relating to a Technical Specification (TS) surveillance requirement compliance question concerning the Class 1E 4160 volt (V) undervoltage relays.

b. Observations and Findings

Class 1E 4160 V undervoltage relays function to sense a loss of voltage on the 4160 V Class 1E essential buses, resulting in a load shed of a bus, and a start of its associated emergency diesel generator. Two undervoltage relays and an auxiliary relay form part of a logic that is described as a functional unit in the Technical Specifications (TSs). Within the functional unit logic, the output contacts for the two undervoltage relays are arranged in parallel such that actuation of either undervoltage relay will result in energizing the auxiliary relay. The actuation of two functional units is required for a load shed of a bus and a start of an emergency diesel generator.

The inspectors questioned how the post maintenance testing for the undervoltage relays was conducted and whether this post maintenance testing was adequate to demonstrate that an undervoltage relay had been properly reinstalled following its removal for bench calibration. The licensee stated that the post maintenance testing procedures required an injection of a test signal into both of the undervoltage relays in the functional unit and that the illumination of a downstream light was used to prove operability. However, this testing only verified that one of the two parallel undervoltage relays operated correctly, but not necessarily the one that had been recently installed after bench testing. Maintenance personnel initiated PCAQR 98-0020 when they realized that the post maintenance testing procedures may not have been adequate.

The licensee determined that the undervoltage relay functional units (which contain undervoltage relays) were operable based on the functional units passing their most recently performed channel functional tests as required by TSs.

c. Conclusions

The inspectors determined that post maintenance testing procedures for the Class 1E undervoltage relays may not be adequate to provide assurance that they had been installed correctly following their removal. This is an unresolved item (50-346/97015-01(DRP)) pending further inspector review.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Engineering Response to Turbine Control Valve Servo Valve Failure

a. Inspection Scope (37551)

The inspectors reviewed the engineering department's response to the November 17, 1997 failure of the servo valve for Turbine Control Valve No. 4.

b. Observations and Findings

The turbine control valves throttle to modulate steam flow to the main turbine. They are positioned to throttle by increasing or decreasing electro-hydraulic control fluid (EHC) pressure to the turbine control valve cylinders. Each turbine control valve has an electrically controlled servo valve that positions to control EHC fluid pressure to the turbine control valve cylinders. The servo control valves have a small in-line filter which removes impurities in the EHC fluid.

On November 17, 1997, Turbine Control Valve No. 4 started to drift in the closed direction and caused an EHC load limit alarm as well as a lowering of turbine load and reactor power, due to reduced steam flow. In response, the operators decreased demanded load to 90 percent in order to close Turbine Control Valve No. 4 for troubleshooting and repairs. The licensee investigated the problem and found that the cause of Turbine Control Valve No. 4 drifting closed was a clogged servo control valve filter. Within 13 hours of the servo valve failure, the servo valve was replaced and tested, and the unit was returned to full power.

PCAQR 97-1499, which was generated to document and investigate the servo valve failure, documented that a similar event had occurred on November 12, 1997. During the November 12, 1997, event, Turbine Control Valve No. 4 modulated in the closed direction for 20 seconds and then modulated open to its demanded position resulting in about a 30 megawatt (MW) turbine load swing.

The inspectors interviewed several plant engineering personnel regarding the November 12, 1997, issue. The inspectors found that a backup Integrated Control System (ICS) engineer initially reviewed the event because the primary ICS engineer was

not at the site. He concluded that the ICS operated properly and decided to pass the information to the primary system engineer for a more detailed review when he returned to the site. The primary ICS engineer returned to the site on November 14, 1997, and performed a cursory review of the 30 MW load swing, but deferred a more detailed review to the following week due to plant cleanup day. As a result, no rigorous investigation into the cause of the November 12, 1997, event was performed until the servo valve failed on November 17, 1997. Following the November 17, 1997, failure, the primary ICS engineer indicated that, had he performed a more detailed review of the November 12, 1997, MW load swing, he would have recognized that Turbine Control Valve No. 4 had a material degradation.

Additionally, Turbine Control Valve No. 4 had reopened slowly during recent testing of its fast acting closing feature. The inspectors questioned the turbine engineer about the unusual performance of the valve during the test. The turbine engineer stated that the slow opening of the valve was attributed to presumed degradation of system test valves. The inspectors concluded this was reasonable and determined that this explanation did not correlate to a problem with the turbine control valve itself.

The inspectors determined that had plant engineering more aggressively investigated the November 12, 1997, MW load swing caused by Turbine Control Valve No. 4 modulating in the closed direction, the servo valve's imminent failure could have been predicted. The inspectors concluded that communication of the degraded status of the valve to the organization would have resulted in the initiation of plans to troubleshoot and repair the valve much earlier. This would have resulted in the organization managing the issue, rather than reacting to the issue.

An apparent root cause of the plugged filter is the station conversion to a 24-month operating cycle. The original General Electric recommendation was to replace the filters as a 12-month preventive maintenance action. The licensee reviewed the preventive maintenance history of all four servo control valves and found that all four of the servo control valves had been replaced during the last refueling outage. The plugged filter was sent to an independent lab for testing with the results expected in January 1998. The other servo control valve filters will be examined during the next refueling outage, scheduled to begin in April 1998, to determine the extent of filter clogging, if any.

At the close of the inspection period, the licensee was evaluating corrective action proposals that would maintain stricter EHC chemistry controls per Electric Power Research Institute guidelines, and proposals to have online cleaning of the EHC reservoir performed once during each operating cycle using a temporary purification skid.

c. Conclusions

The plant engineering organization responded well to the failure of the servo control valve on November 17, 1997. However, plant engineering missed an opportunity to predict the servo control valve failure because they did not aggressively review the 30 MW load swing that had occurred the week before, and did not gather and assess available information regarding the past performance of the turbine control valve during routine testing. Corrective actions to prevent future clogging of turbine control valve filters appear to be adequate to prevent recurrence.

E7 Quality Assurance in Engineering Activities

The inspectors attended several Station Review Board meetings throughout the inspection period. Station Review Board members displayed good technical knowledge of subject matter presented to them. Members solicited feedback from the sponsors of associated documentation and the feedback was appropriately reviewed. The members requested additional information be obtained when clarification or explanation was needed. The Station Review Board conducted a good evaluation of Safety Evaluation 97-0069 Temporary Modification for Emergency Diesel Generator No. 1 (EDG No. 1) Speed Sensing Circuit (See Section F2.2).

E8 Miscellaneous Engineering Issues

(Closed) Unresolved Item 50-346/96007-01(DRS): Acceptability of no 10 CFR 50.59 safety evaluations for attachment of Data Acquisition System (DAS) units to the Safety Features Actuation System (SFAS) and the ICS was questioned. During the original inspection, engineering personnel stated that sufficient electrical isolation had been provided such that a failure of the DAS units or other plausible failures would not affect the functionality of the SFAS and ICS. Although the attachment of DAS units was considered a modification, the attachment of DAS units was not considered a change to the facility as described in the Updated Safety Analysis Report (USAR) because the functionality of equipment described in the USAR (e.g., the SFAS and ICS) was not affected. Consequently, 10 CFR 50.59 did not apply to the modifications and therefore 10 CFR 50.59 safety evaluations did not need to be conducted.

IV. Plant Support

R1 Radiological Protection and Chemistry (RP&C) Controls

R1.1 Containment Entry At Power (83750)

The inspectors accompanied the licensee during a containment entry at 100 percent power to observe a maintenance evolution. The maintenance involved performing temporary modifications to reactor coolant pump upper thrust bearing resistance temperature detectors for reactor coolant pumps 2-1 and 2-2. The ALARA briefing for the containment entry was thorough. Predicted area radiation dose rates closely matched those actually found in containment. Radiation protection personnel provided excellent assistance and support for the entry team. Total dose received for the entry was about 10 millirem. The inspectors concluded that the entry and maintenance work was effectively coordinated and controlled with minimal dose expended for the job.

S8 Miscellaneous Security and Safeguards Issues

(Closed) Violation (50-346/95010-04(DRS)): Contrary to the requirements in 10 CFR 26, the licensee imposed fitness-for-duty sanctions that were not described in its written policies or procedures, and did not provide prior training on these matters. This issue involved a violation that was issued on April 19, 1996.

The inspectors confirmed that, following identification of these deficiencies, the licensee revised Procedure IS-AC-00018, "Drug and Alcohol Testing Program," effective October 13, 1995, and Procedure NG-IS-00004, "Fitness for Duty Program," effective March 19, 1996. The revised procedures stated that urine specimen testing to the limit of detection (LOD) will be done when specimen dilution is suspected. In addition, the possible sanctions due to a positive LOD test were specified. Before carrying out these procedure changes, all site personnel were required to read and acknowledge having read the updated procedures. These corrective actions resolve all issues associated with this violation.

F1 Control of Fire Protection Activities

F1.1 Smoke in the Radiological Restricted Area (RRA)

a. Inspection Scope (93702)

The inspectors observed the licensee respond to the presence of smoke in the Radiological Restricted Area.

b. Observations and Findings

On December 4, 1997, the licensee evacuated personnel from the Radiological Restricted Area (RRA) when smoke was reported on Elevation 603' of the auxiliary building near the elevator. Procedure DB-OP-2529, "Fire Procedure," was entered and the designated control room and zone operators manned the fire brigade. During its investigation, the licensee determined that off-site fire assistance was not needed when the source of the smoke was determined to be from the electrical generator for the auxiliary building elevator machinery room and not an actual fire. Subsequently, the control room operators appropriately classified the event as a smoke irritant. The smoke from the generator stopped propagating when its supply power breakers were opened. Smoke was then cleared from the area by starting Radwaste Supply Fan C013.

During the event, the inspectors observed good communication, appropriate donning of fire protection gear (coats, pants, boots and respirators), timely manning of the fire brigade, and appropriate use of procedures. Two PCAQRs were written to document activation of the station fire brigade and to document a concern regarding the blocked exit of personnel on Elevation 545' due to the presence of smoke in the stairwell. Regardless of the blocked exit, all individuals were accounted for at the RRA exit following the evacuation.

c. Conclusion

The licensee appropriately responded to the smoke in the RRA per station procedures.

F2 Status of Fire Protection Facilities and Equipment

F2.1 Testing Ventilation Smoke Detectors

a. Inspection Scope (64704)

The inspectors questioned the adequacy of the licensee's testing of ventilation smoke detectors.

b. Observations and Findings

The inspectors questioned whether surveillance procedures for testing smoke detectors installed in plant ventilation ducts provided instructions to check for blockage of the smoke detector sensor tubes. The sensor tubes, which are connected to the smoke detectors and are installed perpendicular to the process stream of ventilation flow, contain holes to sense ventilation flow for smoke.

In response to the inspectors' questions, the licensee found that this check was not done. Further, the licensee confirmed that the vendor technical manual recommended that sensor tubes be periodically checked for blockage and subsequently generated 17 maintenance work orders to perform this check. However, the licensee did not generate a PCAQR documenting this problem.

Concerned that surveillance procedures did not incorporate the vendor's recommendations, the inspectors discussed with plant management the expectations for initiating a PCAQR for this issue. The inspectors found that management expected a PCAQR be written. Subsequently, PCAQR 97-1660 was written to document potential blockages of smoke detectors. The inspectors reviewed the Davis-Besse Fire Hazard Analysis Report and noted that credit was taken for detector operation in the analysis. Interviews with fire protection personnel regarding this observation determined that smoke detectors in ventilation systems were not needed to respond to a fire postulated by 10 CFR Part 50, Appendix R. The licensee stated the test procedures would be improved to check for sensor tube blockage.

c. Conclusions

Ventilation smoke detector surveillance procedures did not include vendor recommendations for testing. The smoke detectors were not required by the fire hazard analysis report for a fire postulated by 10 CFR Part 50, Appendix R. Nevertheless, individuals involved in this issue did not originally initiate a PCAQR which did not meet management's expectations regarding the threshold for writing PCAQRs.

F.2.2 Emergency Diesel Generator (EDG) Speed Sensing Circuit Not Protected for Hot Shorts

a. Inspection Scope (64704)

On December 5, 1997, the inspectors questioned the licensee as to whether the speed sensing circuit for the safe shutdown of EDG No. 1 had isolation and protection circuitry (electrical disconnects and/or resistors) as required by 10 CFR Part 50, Appendix R, III, L, 7.

b. Discussion

The EDG speed sensing circuit provides speed indication for tachometers in the EDG room and in the control room. Further, the speed sensing circuit functions to start the EDG room supply fans at 40 revolutions per minute (rpm), disengage the air start motors at 200 rpm, and flash the generator at 400 rpm. The inspectors gave the licensee another utility's condition report describing that the speed sensing circuit was vulnerable to a hot short condition (125 VAC or DC current applied to one leg of the speed sensing switch). Davis-Besse and the other utility had EDGs manufactured by the same vendor. The hot short condition could have occurred during a control room and/or cable spreading room fire which could have caused a fault in the circuitry and rendered the EDG inoperable if the circuit remained unprotected.

On December 12, 1997, after its review, the licensee confirmed that an electrical disconnect was installed as required by 10 CFR Part 50, Appendix R but that resistors were not installed in the circuitry to provide hot short protection. Subsequently, the licensee initiated PCAQR 97-1624 to document the design deficiency and entered TS 3.3.3.5.2.b which permitted the inoperable electrical disconnect and control circuit provided that a Special Report was issued to the NRC if the circuit was not restored to operable status within 30 days.

The inspectors reviewed the control room fire procedure and found that it directed operators to open the electrical disconnect to isolate and protect circuits from faults caused by fires in the control room. The inspectors were concerned that since resistors were not installed in the circuitry, a hot short could occur in the speed sensing circuitry before the disconnect was opened. As a result, the inspectors questioned a shift supervisor if entry into this TS was applicable given that the circuit was not *designed* for hot short protection. Also, the inspectors questioned if a one-hour report should be made per 10 CFR 50.72(b)(ii)(B) since the circuitry was not *designed* according to 10 CFR Part 50, Appendix R, III, L, 7. The shift supervisor contacted regulatory affairs personnel and described the inspectors' concerns. Regulatory affairs personnel stated they were not outside the design requirements of 10 CFR Part 50, Appendix R, since TS 3.3.3.5.2.b applied.

On December 18, 1997, the inspectors clarified the concerns to regulatory affairs personnel that the tachometer was not protected per the requirements of 10 CFR Part 50, Appendix R, III, L, 7 and that TS 3.3.3.5.2.b did not apply in this case. The licensee again reviewed electrical schematics and confirmed that the speed sensing circuitry was the only Appendix R circuit that did not have resistors installed. The licensee realized that the plant was outside the design basis and declared EDG No. 1 inoperable and made a one-hour report. Compliance with 10 CFR Part 50, Appendix R, III, L, 7 was restored by taking the disconnect switch for the speed sensing circuit to local. This removed the concern that a hot short caused by a control room fire would possibly affect the speed sensor circuit. Subsequently, a temporary modification was performed on the speed sensing circuit to open the connection to the control room and allow placing the disconnect switch back to normal to eliminate a control room annunciator alarm.

The inspectors confirmed that the control room tachometer was only needed to verify the EDG was running and not for speed indication. The inspectors verified other parameters (frequency, synchronizing lights) were available to the operators necessary to make this

verification. Therefore, the inspectors concluded that isolation of the circuitry by disconnecting the control room tachometer was acceptable.

c. Conclusion

The inspectors concluded that the speed sensing circuit for EDG No. 1 was not protected for a hot short condition per 10 CFR Part 50, Appendix R, III, L, 7 requirements and concluded the plant was outside its design basis. Initially, the licensee did not recognize this fact because it erroneously thought TS 3.3.3.5.2.b applied in this case. The licensee's immediate corrective action to disconnect the tachometer was acceptable. This issue will be tracked as an unresolved item (50-364/97015-02(DRP)) pending the inspectors' final review of the circumstances surrounding this issue.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on January 7, 1998. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. H. Lash, Plant Manager
R. E. Donnelion, Director, Engineering & Services
D. L. Eshelman, Manager, Operations
J. L. Michaelis, Manager, Maintenance
P. R. Hess, Manager, Supply
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F. L. Swanger, Manager, Design Basis Engineering
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D. P. Ricci, Supervisor, Operations
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R. S. Lawrence, Assistant Shift Supervisor
V. J. Patton, Fire Protection Advisor
C. A. Kraemer, Engineer, Licensing
A. Conway, Student
T. Kozlowski, Student

INSPECTION PROCEDURES USED

IP 37551:	Onsite Engineering
IP 61726:	Surveillance Observations
IP 62707:	Maintenance Observation
IP 64704	Fire Protection Program
IP 71707:	Plant Operations
IP 93702:	Prompt Onsite Response to Events at Operating Power Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-346/97015-01 (DRP)	URI	Inadequate Testing of Undervoltage Devices
50-364/97015-02 (DRP)	URI	Inadequate Hot Short Protection of EDG Tachometer

Closed

50-346/96007-01 (DRS)	URI	No Safety Evaluation to Connect DAS Equipment
50-346/95010-04 (DRS)	VIO	Suspected Specimen Dilution

LIST OF ACRONYMS AND INITIALISMS USED

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
DAS	Data Acquisition System
DC	Direct Current
EDG	Emergency Diesel Generator
EHC	Electro-hydraulic Control
ESF	Engineered Safety Feature
LOD	Limit of Detection
ICS	Integrated Control System
MW	Megawatts
MWO	Maintenance Work Order
NRC	Nuclear Regulatory Commission
PCAQR	Potential Condition Adverse to Quality Report
PDR	Public Document Room
RCP	Reactor Coolant Pump
rpm	Revolutions per minute
RRA	Radiological Restricted Area
SFAS	Safety Features Actuation System
TS	Technical Specification
URI	Unresolved Item
USAR	Updated Safety Analysis Report
V	Volt
VAC	Volts-Alternating Current
VIO	Violation