U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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Report No:	50-346/96005 (DRP)
Licensee:	Toledo Edison Company
Facility:	Davis-Besse Nuclear Power Station
Location:	5503 N. State Route 2 Oak Harbor, OH 43449
Dates:	June 11 - August 14, 1996
Inspectors:	S. Stasek, Senior Resident Inspector K. Zellers, Resident Inspector K. Selburg, Radiation Protection Specialist G. Pirtle, Security Specialist
Approved by:	R. Lanksbury, Chief, Projects Branch 2 Division of Reactor Projects

EXECUTIVE SUMMARY

Davis-Besse Nuclear Power Station
NRC Inspection Report 50-346/96005 (DRP)

This inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers an 8-week period of resident inspection; in addition, it includes the results of announced inspections by a regional radiation protection specialist, and a regional security specialist.

Operations

- In general, the inspectors noted that the conduct of operations continued to be professional in nature with operations personnel utilizing a safety conscious approach (Section O1.1).

- The inspectors identified that Technical Specification (TS) 6.2.3 was not updated when certain operations personnel began standing 12-hour watches. This is an unresolved item pending licensee submittal of a License Amendment Request to revise the TS (Section O6.1).

- The inspectors identified that control room operators were unable to calculate the required Boric Acid Addition Tank volume/boron concentration limits to assure TS compliance (Section O4.1).

- The inspectors identified that guidelines addressing how shift managers perform SRO proficiency watches were vague. This is an unresolved item pending further review by NRC Region III and the Office of Nuclear Reactor Regulation (NRR) (Section O5.1).

Maintenance

- The inspectors identified that inadequate control over the use of soluble plastic to cover floor drains in the auxiliary building (AB) resulted in potentially invalid drawdown tests of the emergency ventilation system (EVS) to verify the integrity of the AB negative pressure boundary (Section M1.3). Boundary integrity was subsequently verified via additional testing, however, this matter is an unresolved item pending completion of inspector review.

- The inspectors identified that failure of plant personnel to understand and adhere to a procedure designed to prevent unauthorized heavy loads from being transported over the reactor vessel constituted a **violation** (Section M8.1). This failure resulted in the actual lift of a 9-ton load over the open reactor with fuel in the vessel. A significant contributor to this event appeared to be weak communications between management, workers in containment, and the control room.

Engineering

- The inspectors identified that the licensee violated 10 CFR 50.59 requirements when plant personnel failed to recognize that a safety evaluation would be needed to assess the acceptability of draining the Primary Water Storage Tank (PWST) prior to draining it and abandoning it inplace (Section E8.1).

- Several procedural inconsistencies to prevent makeup pump cavitation were identified by the inspectors. Weak documentation of makeup pump cavitation design bases in the system description was noted (Section E3.2).

Plant Support

- No discernable radiological impact was noted on the environment from plant operation (Section R1.1).

- Plant water quality was very good, and the chemistry quality assurance program was strong as noted through very good instrument quality control charts, current radiochemistry calibration standards, and very good results in the vendor supplied inter-laboratory cross check program (Sections R1.2, R7).

- Overall, security functions were well performed. Self-assessment efforts and monitoring use of security badges were considered strengths. Inspection followup items were noted pertaining to: an appeal for an access authorization denial (Section S8.7); needed administrative revision to the security section of the UFSAR; and review of the number of non-security doors locked and controlled by the security computer system (Section S2.2). Unresolved items were noted pertaining to waiver of medical and physical fitness requirements for security officers (Section S3), chain-of-custody accountability for a fitness-for-duty urine specimen (Section S8.8) and Safeguards Information potentially compromised on a Local Area Network (Section S2.1).

Report Details

Summary of Plant Status

The unit remained at nominally full power operation throughout the inspection period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

Using Inspection Procedure 71707, the inspectors conducted frequent reviews of ongoing plant operations. Performance of control room activities were observed, control room panels routinely walked down, and discussions with control room personnel were conducted to ascertain their cognizance of current plant conditions. In general, the inspectors noted that the conduct of operations continued to be professional in nature with operations personnel utilizing a safety conscious approach. However, specific areas of concern were noted during the inspection period and are detailed in the sections below.

O2 Operational Status of Facilities and Equipment

O2.1 Engineered Safety Features System Walkdowns (71707)

The inspectors used Inspection Procedure 71707 to walk down the accessible portions of the following engineered safety features (ESF) and important-to-safety systems:

- Emergency Diesel Generator No. 1
- Emergency Diesel Generator No. 2
- Auxiliary Feedwater System - Trains 1 and 2
- Decay Heat Removal - Train 1

Equipment material condition was found to be acceptable in all cases. Pump/motor fluid levels were within their specified bands. Local controllers were correctly positioned and required instrumentation appeared functional. Auxiliary equipment necessary for system operability also appeared to be functioning properly. Few oil and fluid leaks were noted. Likewise, housekeeping was acceptable. The inspectors identified no substantive concerns as a result of the walkdowns.

O2.2 Bus YBU Experienced Voltage Swings

On June 13, during a routine control room panel walkdown, the inspectors noted that non-essential bus YBU voltmeter indication was swinging between 118v and 132v. Loads associated with YBU included portions of the integrated control system (ICS), and the main turbine electro-hydraulic control (EHC) system. Control

room operators were immediately notified, and actions were taken to troubleshoot the problem and transfer the electrical supply of YBU's upstream invertor, YVB, from its normal supply to its backup supply, bus YBR. No significant plant transient resulted from the YBU/YVB failure, however, feedwater flow chart recorders exhibited much more "noise" indicating that ICS control was degraded until YVB was realigned to YBR. Subsequently, a fault in YVB was identified and a maintenance work request initiated to repair the invertor.

O4 Operator Knowledge and Performance

O4.1 Operators Unable to Perform Boric Acid Addition Tank Calculation

a. Inspection Scope (71707)

During a routine control room walkdown, the inspectors noted an apparent discrepancy between the control room indication of Boric Acid Addition Tank (BAAT) levels versus the posted minimum acceptable levels used to comply with Technical Specification (TS) 3.1.2.9.a requirements. Indicated levels for both tanks appeared to be slightly below the posted minimum acceptable levels. Additionally, the BAAT boron concentrations and tank levels that were logged on the control room status board were different values than were logged adjacent to the BAAT level indicators.

b. Observations and Findings

During the recently completed refueling outage (conducted April - May, 1996), the licensee reloaded the core utilizing fuel with slightly higher enrichments to support the eventual conversion to a 24-month operating cycle. This change in the core loading required a change to TS 3.1.2.9, Borated Water Sources, thereby implicitly requiring both BAAT volumes to meet TS compliance. The Chemistry department routinely sampled the BAATs on a weekly basis to verify compliance with the TS.

Previous to the change, only one BAAT volume was required to meet TS, and the calculations to determine acceptable BAAT volumes/boron concentrations were straightforward. This configuration allowed the operators to designate and control one BAAT to meet TS requirements while providing the flexibility to operate the second tank as desired. When the TS was changed, the calculation to determine acceptable BAAT volumes became more complex, in that volumes and boron concentrations for both tanks needed to be considered in the aggregate to verify compliance with the TS.

When the inspectors addressed the concern with the Control Room (CR) Senior Reactor Operator (SRO), the CR SRO unsuccessfully attempted to recalculate the required tank levels versus boron concentrations. Other control room operators were also unable to perform the necessary calculation. A reactor engineer, who was in the control room at the time, was subsequently successful in performing the calculation. The result verified that the current BAAT volumes/concentrations were incompliance with TS requirements.

When the operators' inability to perform the requisite calculation was discussed with the Operations Superintendent, he indicated that training to determine combined BAAT volumes/concentrations had been conducted prior to the TS change becoming effective. He was unsure as to why the operators were unable to perform the calculation.

In response, additional training was conducted for the operators to ensure they could perform the required calculation. In addition, a computer algorithm was developed to automate the calculation.

The inspectors independently verified that the computer code algorithm could appropriately calculate required BAAT volumes versus boron concentrations and that operators were correctly using the computer code.

c. Conclusions

Although Chemistry routinely sampled the BAATs on a weekly basis to assure compliance with the TS, operations personnel could make changes to BAAT inventory in the interim which would necessitate them being able to verify TS compliance until the next chemistry sample was drawn. The inspectors determined that control room operators were unable to determine the required BAAT volumes/boron concentrations following the recent change to the TS.

Following additional training, and with the help of a computer aided algorithm, operators subsequently demonstrated the ability to correctly perform the necessary calculation.

O5 Operator Training and Qualification

O5.1 Shift Manager Proficiency Watches

a. Inspection Scope (71707)

On August 5, during a routine review of the control room log, the inspectors noted that a shift manager had fulfilled a dual role while on shift the previous day. The log indicated that the shift manager had fulfilled the shift manager function as well as performed an SRO proficiency watch (10 CFR 55.53) concurrently. At Davis-Besse, a shift manager is responsible for providing one of the interfaces between operations and maintenance. During offshift times, on a limited basis, the shift manager also functions as the plant manager (designee). In addition, he is qualified to substitute as the shift supervisor if needed, and also is the shift technical advisor (STA), as required by the TS. As an SRO with an active license, he is required to stand at least seven 8-hour proficiency watches per calendar quarter to demonstrate his continued ability as an operator. The inspectors were concerned about the appropriateness of a shift manager performing his normal functions while simultaneously completing a proficiency watch to maintain qualification as an SRO.

b. Observations and Findings

From subsequent discussions with shift manager personnel, the inspectors ascertained that current licensee guidance as to what activities shift managers must perform to maintain their SRO proficiency was vague. Most shift managers fulfilled the SRO proficiency watch functions as required by 10 CFR 55.53 by fulfilling their normal shift manager functions and supplementing those with other informally implemented functions in the control room.

One shift manager, however, indicated that he fulfilled his SRO proficiency watch requirements by typically substituting for the assistant shift supervisor for the required timeframes. He did not relinquish his normal shift manager duties during that time and performed both job functions concurrently.

However, again the inspectors were concerned that the shift manager was fulfilling the control room SRO position as well as the STA position at the same time.

At the end of the inspection period, the licensee was reviewing the adequacy of programmatic controls governing SRO proficiency watch requirements.

The inspectors also requested assistance from NRC Region III as well as the Office of Nuclear Reactor Regulation (NRR) operator licensing groups to assess the adequacy of Davis-Besse's proficiency watch requirements. The question of whether shift managers' performance of SRO proficiency watches met the requirements of 10 CFR 55.53 was under review by Region III and NRC Headquarters experts at the end of the inspection period. This matter is considered an **unresolved item (50-346/96005-01(DRP))** pending completion of NRC review and further inspector followup of licensee actions on this matter.

O6 Operations Organization and Administration

O6.1 Operator Shift Schedules Not Consistent With Technical Specifications

a. Inspection Scope (71707)

The inspectors conducted a review of operating crew shift schedules including verification of their conformance with TS Section 6.2.3, Facility Staff Overtime.

b. Observations and Findings

During the review, the inspectors noted that since mid-1995, SROs routinely worked a 12-hour per day shift schedule with a nominal work week of approximately 40 hours. Overtime usage was minimal. However, the inspectors recognized that TS Section 6.2.3 specified that, "Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work *a normal 8-hour day*, 40-hour week while the plant is operating....Routine deviation from the above guidelines is not authorized." As such, the TS did not clearly allow the use of 12-hour shifts.

When this matter was brought to the attention of licensee personnel, Potential Condition Adverse to Quality Report (PCAQR) No. 96-1097 was initiated. The licensee recognized the administrative oversight and intended to submit an expedited License Amendment Request (LAR) to revise the TS to more accurately reflect current work schedules.

Discussions with the NRC Regional Office, as well as NRR revealed that this matter was of minor safety consequence and that several licensee's had 12-hour work schedules previously approved and revisions to the associated TS issued.

The inspectors also reviewed the B&W Standard Technical Specifications Section 5.2.2.e. which stated, "The objective shall be to have operating personnel work an [8 or 12] hour day, nominal 40 hour week when operating." Implicit from this was that 12-hour watches were acceptable.

c. Conclusions

Use of a 12-hour shift schedule was an acceptable alternative to an 8-hour schedule. However, the practice of working 12-hour shifts was not clearly in conformance with the objective of TS Section 6.2.3. As of the end of the inspection period, the licensee had initiated actions to submit a formal LAR in an expedited manner. This matter is considered an **inspection followup item (50-346/96005-02(DRP))** pending licensee submittal of a LAR to revise TS Section 6.2.3.

O7 Quality Assurance in Operations

O7.1 Review of INPO Assessment Report (71707)

During the inspection period, the inspectors reviewed the recently issued Institute of Nuclear Power Operations (INPO) assessment report for Davis-Besse. INPO conducted the onsite portion of the assessment on February 19 - March 1, 1996. The inspectors concluded that INPO's assessment of Davis-Besse's performance appeared to be consistent with the NRC's assessment. No additional regional followup of the issues discussed in the assessment report was planned.

O8 Miscellaneous Operations Issues (92901)

O8.1 (Closed) Inspection Followup Item (50-346/93024-02): Clarification of Technical Specifications 3.6.3.1 and 3.3.2.2. T.S. 3.6.3.1 specified what actions were required when a containment isolation valve was declared inoperable. One means specified would be to isolate the penetration by use of at least one closed manual valve or blind flange.
No limitations were placed on the timeframe for which this compensatory action could remain in place nor any requirements specified for the qualification of the valve associated with the new containment boundary. The inspectors subsequently determined that NRR was cognizant of this matter and had factored this into the Technical Specification requirements as written.

Technical Specification 3.3.2.2 had not included verification that the auxiliary feedwater cross-connect valves were necessary to ensure operability of the AFW system. The licensee thereafter conducted additional reviews of the TSs and had requested and received revisions to the affected pages. The inspectors had no further concerns in either area.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Maintenance Activities (62707)

The inspectors observed/reviewed all or portions of the following work activities:

- MWO 3-96-0393-01 62MR relay testing for EDG #2
- MWO 3-96-5130-01 Bus D1 Relay Testing
- MWO 3-96-1062-01 Switch Replacement for EVS Fan 2 at BF1203
- MWO 7-96-0893-01 Recalibrate/Repair Turbine Bypass Valve SP13A1

Maintenance personnel were knowledgeable of systems and components that they were performing work on, had procedural reference material available, and used work packages appropriately. Operations personnel were aware of maintenance in progress and control room briefs were observed to occur for maintenance activities that might impact operation of the plant. The inspectors verified that post maintenance cleanup activities left work places in an acceptable state of housekeeping.

M1.2 Surveillances (61726)

The following surveillance activities were observed/reviewed:

- DB-SS-03255 EVS Train 2, 18 month SFAS Drawdown Test
- DB-SC-03111 SFAS Channel 2 Functional Test
- DB-SP-03136 DHR Pump 1 Quarterly Pump and Valve Test
- PM-96-0393-01 EDG 2 Local Panel Meters Functional Check

With the exception of the EVS Drawdown Test (see Paragraph M1.3), all surveillances were conducted in an acceptable manner. Surveillances reviewed were conducted in accordance with approved procedures and equipment was observed to perform as expected. Selected process parameters were verified to have been recorded correctly and applicable performance criteria were verified to have been satisfied. The inspectors also reviewed applicable sections of the USAR with no discrepancies noted.

M1.3 Emergency Ventilation System (EVS) Drawdown Testing

a. Inspection Scope (71707, 61726, 37551)

On July 29, during a walkdown of the auxiliary building, the inspectors noted that a floor drain in mechanical penetration room (MPR) #2, which was located within the EVS negative pressure boundary (NPB) area, was covered with a soluble plastic material. Further, the plastic, which was taped in place was "ballooned up", indicating that a differential pressure existed between the MPR and the miscellaneous waste drain tank (MWDT), where the floor drain discharged to. The MWDT was located outside the EVS NPB. The inspectors were concerned that EVS drawdown tests that were conducted with soluble plastic covering one or more floor drains would not adequately verify integrity of the NPB.

b. Observations and Findings

The inspectors determined that the soluble plastic had been applied to the floor drain by the radiation protection (RP) department to minimize spread of airborne contamination. With the subject floor drain routed to the MWDT which was located outside of the NPB, airflow would normally be from the MWDT into MPR #2. By design, to maintain the integrity of the negative pressure boundary, the floor drain was "sealed" via a closed wafer check valve in the floor drain itself. All floor drains within the NPB that communicate to areas outside the NPB were to incorporate similar wafer check valves.

The inspectors found that RP did not track which floor drains were covered with the soluble plastic. As such, it was unknown whether one or more drains had been covered with the plastic during previous EVS drawdown testing. With soluble plastic covering one or more floor drains within the NPB, the improper functioning of the associated wafer check valve would have been masked. The licensee subsequently decided to perform a drawdown test of EVS Train 2.

Several problems were encountered during performance of the drawdown test. When EVS #2 fan was initially started from the control room, it tripped after approximately 1 minute. Subsequent investigation determined that a problem with a motor contact in the run circuit for the fan was the cause of the trip. The motor contact was reset and the fan restarted multiple times. The motor contact was subsequently replaced.

Following correction of the motor contact problem, the drawdown test was continued. The time to draw the Technical Specification required 1/4 inch of water vacuum at a flowrate of 8,000 scfm was greater than the 4 seconds acceptance criteria. Subsequent evaluation of the test procedure revealed that the procedure had been substantially revised since the last time the test had been conducted. The problem apparently occurred as a result of the assumed starting pressure from which the drawdown was initiated. The test procedure assumed that the drawdown would occur from zero pressure relative to the outside atmosphere. However, when the containment purge system, which was the normal ventilation

for the NPB area, was secured, pressure in the NPB increased to a slight positive pressure. As such, a longer time was needed to draw down to the 1/4 inch of vacuum, thereby exceeding the 4-second acceptance criteria.

The test was thereafter re-performed following the establishment of zero differential pressure in the NPB with the EVS drawing the required vacuum in 1.5 seconds.

A question was raised by licensee personnel following completion of the surveillance test as to whether having an initial positive pressure within the NPB negated assumptions made in the accident analysis. At the end of the inspection period that concern was being evaluated by engineering. An investigation was also initiated to determine the cause of the positive pressure observed prior to the start of the drawdown test. During that review, the licensee identified that an additional opening existed from within the NPB to another area in the auxiliary building outside of the NPB.

This opening was created during a modification conducted during the recently completed refueling outage where sand was removed from the containment annulus area. When the sand was removed from the annulus area, two floor drains became uncovered. One floor drain was appropriately addressed via installation of a wafer check valve to maintain NPB integrity. The second floor drain was not recognized as a connection from within the NPB to outside areas.

Additionally, the licensee also identified that the calculated equivalent maximum acceptable NPB hole size that would not adversely affect the capability of the EVS system to draw the necessary vacuum in the required timeframe may have been in error. The maximum equivalent hole size was previously calculated to be 403 square inches, however, this number apparently did not take into account system design leakage. System design leakage was also previously calculated to be approximately 360 square inches. Therefore, the new limit for maximum equivalent openings in the NPB would be the difference of the two values. This matter is currently under engineering review.

c. Conclusions

The integrity of the NPB was adequately verified via the recently completed drawdown test. The RP department initiated actions to better track installation and removal of soluble plastic over floor drains in the NPB. The drawdown test procedure was under review at the end of the inspection period to evaluate adding prerequisite steps to assure that floor drains in the NPB area were uncovered during future drawdown tests.

However, inspector review of this matter was not complete at the end of the inspection period. Pending completion of inspector evaluation of previous drawdown tests, and review of the sand removal modification, as well as the engineering followup of the issues identified related to the EVS system design and testing limitations, this is considered an **unresolved item (50-346/96005-03(DRP))**.

M8 Miscellaneous Maintenance Issues (92902)

M8.1 (Closed) Unresolved Item (50-346/96003-03): Heavy load lifted over open reactor vessel. This event involved use of the containment polar crane to lift an approximately 9-ton Reactor Vessel Head Lifting Tripod (RVHLT) over the open reactor vessel on April 16, 1996, during the recently completed refueling outage. At the time of the lift the internals plenum was installed and fuel was in the core. Subsequent licensee review of this issue determined that the consequences of a postulated drop of the RVHLT onto the reactor vessel included possible fuel damage. The RVHLT could impact one or more control rod guide tubes, imparting sufficient kinetic energy to drive the control rod guide tube onto one or more fuel assemblies, causing some amount of damage to the affected assemblies.

The licensee did not quantify the potential radiation exposure to personnel in containment or levels of offsite releases that could have resulted due to difficulties in predicting the extent of fuel damage.

Inspector review of plant procedure DB-MM-06002, Revision 01, "Polar Crane Operation", identified the following procedural requirements that licensee personnel had failed to follow:

- Step 2.2.30 stated that "During the period when the reactor vessel head is removed and irradiated fuel is in the containment vessel and fuel is not being moved, the polar crane hoists shall be operated over the refueling canal only when necessary and in accordance with approved operating procedures stating the purpose of such use."

- Step 2.2.34 stated, in part, that "Equipment is to be moved within the load path area (Attachment 3)." Attachment 3 specified a load path layout diagram of containment that excluded the area around the reactor vessel.

- Step 2.2.36 stated that "The following heavy loads are lifted using the polar crane..." The subject list included the reactor vessel head lifting rig.

Because licensee personnel failed to adequately understand and adhere to DB-MM-06002, a procedure designed to prevent unauthorized heavy loads from being transported over the open reactor vessel, this is considered a **violation (50-346/96005-04(DRP))** of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." Criterion V specifies, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, and drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, and drawings.

As noted in inspection report 50-346/96003, it appears that a significant contributor to this event was inadequate communications between several parties involved with making the lift, including workers and supervisors in containment, management representatives in outage central, as well as control room personnel.

M8.2 (Closed) Inspection Followup Item (50-346/94005-01): Measuring and Test Equipment (M&TE) calibrated using non-approved standards. This situation resulted due to the merging of the Davis-Besse and Perry plants M&TE programs and the relocation of the metrology lab to the Beta facility located approximately midway between the two sites. Subsequently, program differences had been resolved, and appropriate procedures were written to address both programs. The inspectors have noted no further similar problems.

M8.3 (Closed) Inspection Followup Item (50-346/95005-02): Minor material condition problems associated with passive inplant equipment installations. Examples included loose bolting identified on ductwork, several junction box covers noted with loose/missing coverplate screws, scaffolding observed in contact with an air operated service water valve, grease noted dripping from a radwaste ventilation fan motor bearing, etc.

In response, the licensee corrected the specific items of concern. In addition licensee personnel conducted followup walkdowns and corrected several additional similar items.

During the tenth refueling outage, the inspectors also performed a walkdown in containment and identified similar problems. The deficiencies were identified to licensee personnel who thereafter initiated actions to correct those items as well as to perform additional containment walkdowns to identify any other problems of a similar nature.

Subsequent to the refueling outage the inspectors had identified no further examples of the type of problems previously noted. As such, this matter is considered closed, however, the inspectors will continue to evaluate plant equipment spaces in this regard during future walkdowns as part of the routine inspection program.

III. Engineering

E3 Engineering Procedures and Documentation

E3.1 Review of USAR Commitments (37551)

a. Inspection Scope

A recent discovery of a licensee operating their facility in a manner contrary to the Updated Safety Analysis Report (USAR) description highlighted the need for a special focused review that compares plant practices, procedures and/or parameters to the USAR descriptions. While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the USAR that related to the areas inspected.

b. Observations and Findings

1) Administrative Errors in USAR Section 13.7 The inspectors identified a number of administrative type errors in USAR Section 13.7, "Industrial Security". These included:

- The specified frequency of tours within the security area,
- Access control procedures for the marshlands within the site boundary,
- Incorrectly described management positions.

Although revision to the USAR was required to correct the noted errors, the changes were all considered administrative in nature because, in part, the marshland is within the Owner Controlled Area (OCA) and the OCA is not regulated by NRC security regulations. However, the completion of the USAR revision to address these administrative issues is considered an **inspection followup item (50-346/96005-05(DRS)).**

2) Erroneous Makeup Tank Pressure Values in Section 9.3 The inspectors identified two minor discrepancies in USAR Section 9.3. They included a makeup tank (MUT) low pressure alarm listed as 18 psig, when the actual setpoint was 17 psig, and a MUT normal operating pressure of 15-35 psig specified when the actual normal MUT pressure range was 25-45 psig. (Reference Section E3.2 of this report for additional details).

3) Fuel Reconstitution Activities Not Addressed In USAR In mid-June, during review of licensee fuel assembly reconstitution activities in the spent fuel pool, the inspectors noted that these types of activities were being conducted on a somewhat periodic basis. Fuel assemblies were being reconstituted to recover the "unburned" portions of the fuel in defective fuel assemblies for eventual re-use in the reactor core. The inspectors reviewed

safety evaluation 95-0060 that had been prepared to address the activities associated with the latest fuel assembly reconstitution evolution and identified no substantive concerns.

Although these activities were evaluated by a safety evaluation, they were not described in the USAR. Regulatory Guide 1.70 (Rev 0), "Standard Format and Content of Safety Analysis Reports For Nuclear Power Plants", to which the licensee was committed to, provided guidance to "Describe the fuel handling system, including the equipment for transporting and handling fuel from the time it reaches the plant until it leaves the plant." Since fuel assembly reconstitution had become an activity that was expected to be performed periodically as defective fuel assemblies were identified, the associated activities, handling equipment, etc. would then need to be discussed in the USAR.

The licensee agreed that fuel reconstitution activities should be described in the USAR and during the inspection period initiated actions to prepare the necessary revisions.

Pending inspector review of the USAR change to describe fuel reconstitution activities in the spent fuel pool, this is considered an **inspection followup item (50-346/96005-06(DRP)).**

E3.2 Review of Selected Makeup Pump Design Requirements

a. Inspection Scope (37551)

The inspectors reviewed makeup pump (MUP) design and operation to assure that the MUPs at Davis-Besse were not susceptible to gas binding during MUT reduced volume conditions. This review was performed based on information that another B&W plant, Crystal River, had identified their MUPs were susceptible to gas binding with reduced MUT volume under certain conditions. Gas binding could cause premature failure of a pump during its operation.

During the review, the inspectors identified an operating curve that apparently allowed exceeding MUP cavitation limits at high MUP flow rates. This discovery expanded the original scope of the inspection to include an evaluation of MUP operational limits and their adequacy to protect the MUPs against cavitation.

b. Observations and Findings

The makeup pumps at Crystal River were part of the Emergency Core Cooling System (ECCS) and were also used for normal charging of makeup to the Reactor Coolant System (RCS). When used to provide normal charging, they took a suction from the MUT. Cover gas pressure and inventory in the MUT were maintained within a specified band. During a postulated accident, a supply valve from the Borated Water Storage Tank (BWST) would open and pump suction would then be from two parallel sources, the BWST and the MUT (suction from the MUT, by

design, did not isolate). In this way, a suction path to the pumps would always have been maintained. As the suction pressure from the makeup tank decreased with decreasing tank level, the static head from the BWST would eventually be higher and pump suction would passively transfer to the BWST.

However, with too high of a cover gas pressure on the MUT, MUP suction would not transfer to the BWST as the MUT emptied, thereby gas binding the pumps, with subsequent damage to the pumps, rendering them unavailable for further accident mitigation.

The inspectors identified no similar gas binding concerns for the Davis-Besse MUPs. MUT cover gas was kept from the MUP suction by automatic isolation of the MUT and transfer of each pump suction three-way valve to the BWST if MUT level decreased to 10 inches. If a makeup pump three-way suction valve did not transfer to the BWST, the associated MUP would trip within 45 seconds. Additionally, plant annunciators were set to alert operators of low MUT levels and pressures. Also, during accident conditions, the MUP suction was manually swapped to the BWST by procedure.

Although the MUPs at Davis-Besse were the only pumps with high enough discharge head available to provide makeup to the RCS at normal operating pressures, they were not designated as ECCS nor did the accident analysis rely upon their functioning to mitigate a design basis accident like they were at Crystal River. Safety-related High Pressure Injection (HPI) and Low Pressure Injection (LPI) pumps were the ECCS pumps credited in the accident analysis for design basis accident mitigation. The MUPs were, however, required by Technical Specifications to provide boron injection to the RCS as an alternate means of shutting down the reactor.

Associated with the review of potentially generic concerns with gas binding of the makeup pumps, the inspectors reviewed the licensee's controls to prevent MUP cavitation.

The inspectors identified that although an operating curve existed that potentially allowed the licensee to cavitate the MUPs under conditions of high makeup flow coupled with low MUT pressure, subsequent review determined that sufficient guidance was available to the operators to prevent the condition from occurring.

Additionally, the inspectors determined that engineering calculations used conservative assumptions, and adequately defined the basis for the generation of MUP and MUT operating curves and operating limits. The operating curves specified limits for makeup flow versus MUT pressure to prevent the onset of cavitation at the MUP. The MUT operating limits specified MUT alarm setpoint and normal operating ranges to prevent cavitation from anticipated transients.

Documentation that discussed the bases for the selection of several limits did not exist. These bases were reconstructed after discussions with operations and engineering personnel who had been involved in the original decision making for

establishing the limits. Also, the system description documentation did not include an adequate discussion of MUP cavitation concerns.

During a review of Emergency Operating Procedure (EOP), DB-OP-02000, (Revision 04), the inspectors identified a potential equipment concern. When MUP suction pressure would be augmented by LPI pump piggyback operation during the EOPs, and the MUP three-way suction valve repositioned from the BWST to the MUT, the potential existed to either overpressurize the MUT with LPI pump discharge pressure or to divert flow through an attached relief valve. The licensee responded to the concern by generating Potential Condition Adverse to Quality Report (PCAQR) No. 96-1103, and were conducting an engineering evaluation of the condition.

Two minor USAR deficiencies were identified and brought to the licensee's attention: USAR section 9.3.4.5.1 described the MUT alarm set-point as approximately 18 psig - the actual set-point was 17 psig; and USAR table 9.3-7 described the normal MUT pressure range as 15-35 psig- the actual operating range was 25-45 psig.

During the course of the inspection, several apparent inconsistencies were identified in operating and emergency procedures:

- The EOPs did not consistently transfer the MUP suction three-way valve to the BWST and did not consistently check that the three-way valve transferred to the BWST during re-positioning.

- The makeup and purification procedure (DB-OP-6006, Revision 03) referenced operating curve CC 6.8A for MUP #1 but omitted a reference to curve CC 6.8B for MUP #2. Also, no guidance for preventing cavitation during dual MUP operation was available to the operators.

- Operating curve 6.6D x-axis incorrectly specified "Total Makeup Pump Flow" versus "Total Makeup Flow". Although the MUPs were rated for 350 gpm at runout, Curves CC 6.8A and 6.8B only specified MUT operating pressures up to 150 gpm.

- The hydrogen addition and degasification procedure (DB-OP-6033 Revision 01, Section 2.2.1) indicated that the minimum MUT pressure to prevent MUP cavitation was 5 psig. According to curves CC 6.8A and CC 6.8B, MUP flow could not be supported at a MUT pressure of 5 psig without risking cavitation at the pump impeller.

- The makeup normal and alternate injection forward flow test procedure (DB-PF-03390 Revision 00, Section 2.2.1) specified 350 gpm as the maximum MUP flow to prevent cavitation. However, MUP cavitation could occur at 350 gpm flow at low MUT pressures. The procedure should specify the appropriate operating curve to prevent cavitation.

c. Conclusions

The inspectors identified no concerns regarding gas binding of the MUPs. Existing procedural guidance for preventing MUP cavitation was inconsistent, and sometimes in error. The inspectors believed that an adequate description of MUP cavitation concerns and their design basis in the system description documentation would have led to an earlier identification and correction of a number of these errors. However, existing procedural guidance for maintaining MUT pressure and level, coupled with oral guidance for limiting makeup line flow to 250 gpm, should prevent MUP cavitation for all the normal and accident scenarios considered.

One equipment concern was identified which involved the capability of the MUT to withstand LPI pump discharge pressure during LPI piggyback operation while the MUP suction three-way valves were repositioning.

Pending completion of licensee actions to clarify documentation to prevent cavitation of the MUPs, and resolution of the issue associated with the potential to overpressurize of MUT, this is considered an **inspection followup item (50-346/96005-07(DRP))**.

E8 **Miscellaneous Engineering Issues (92903)**

E8.1 (Closed) Unresolved Item (50-346/96002-06): Untimely Safety Evaluation (SE) Relating to the Draining and Abandonment of the Primary Water Storage Tank (PWST). The primary water system, including the PWST was described in the Updated Safety Analysis Report (USAR). The inspectors subsequently verified that the PWST had been drained on December 15, 1995, without a 10 CFR 50.59 safety evaluation being completed to determine the acceptability of that action. The intent was to abandon the tank "inplace" and not to perform maintenance to return it to an operable status to conform to the current USAR description. A modification package (Mod 95-0050) was in the process of being prepared at the time to abandon the primary water system, but engineering evaluations, including the safety evaluation, had not been completed.

It appeared that until recently, the status of the PWST received a low priority. The tank contained trace amounts of tritium, and as such, was considered a "dirty" water source. It had not been used for over 10 years and had been considered for abandonment several times in the past. Early in 1994, a degradation in a heat tracing circuit was identified with no actions taken to correct or repair the circuit at the time.

A safety evaluation was subsequently completed and concluded that abandonment of the BWST was acceptable in that the demineralized water system could provide the necessary supply/makeup capability to the USAR designated systems. It also specified that to do that in total, check valve WM-19 internals would have to be removed.

The inspectors independently verified that removal of check valve WM-19 internals would enable the demineralized water system to supply the primary water header and thereby provide makeup water to all components previously supplied by the PWST. The inspectors also verified that check valve internals to WM-19 were removed during the recently completed refueling outage.

Following review of the subject safety evaluation, the inspectors concluded that the abandonment of the PWST was of minimal safety consequence. However, by abandoning the PWST "inplace", the licensee made a change to the facility as described in the USAR, and failed to recognize that a safety evaluation per 10 CFR 50.59 would be needed to assess the acceptability of draining the tank prior to taking that action. As such, this is considered a **violation (50-346/96005-08(DRP))** of 10 CFR 50.59.

The licensee subsequently generated Potential Condition Adverse to Quality Report (PCAQR) No. 96-1104.

E8.2 (Closed) Violation (50-346/93019-02): Failure to assure proper equipment configuration as a result of inadequate configuration management. Aspects of this issue included: 1) a failure of plant personnel to understand all operability requirements for the auxiliary feedwater system, 2) failure to maintain drawings and operating procedures in a consistent manner, 3) a failure to verify service water valves associated with containment air coolers were in their proper position as required by Technical Specifications, and 4) the failure of quality assurance audits and surveillances to identify and correct similar configuration control problems.

In response, the licensee initiated several actions to correct the aforementioned weaknesses. A detailed review of the AFW system design basis was undertaken. As a result, Technical Specifications and the USAR description were revised, procedures were modified and updated training for operations personnel was conducted. In addition, detailed walkdowns were conducted of all major plant systems onsite to identify any discrepancies between the as-built condition, and the drawings and procedures.

These walkdowns were completed and all identified drawings/procedure discrepancies were corrected. In regards to the CAC SW valve TS surveillance requirements, verification checks were thereafter instituted following identification of the problem, and since that time all required verifications appear to have been made in a timely manner. Quality Assurance audits were upgraded to ensure that specific line items were reviewed that involved completed corrective actions from prior audit findings. Additionally, post implementation verification of audit finding responses were instituted by the QA organization.

E8.3 (Closed) Inspection Followup Item (50-346/95005-04): Station Review Board (SRB) not properly trained to conduct reviews of dry cask storage related issues. Subsequently, additional training of SRB, Company Nuclear Review Board, and other personnel involved with the review and approval of matters associated with

dry cask storage, was conducted. The inspectors noted thereafter that quality of review activities had substantially improved.

E8.4 (Closed) Inspection Followup Item (50-346/95005-05): Dry cask storage licensing/design documents not included in the licensee's document control system. Subsequently, the licensee established a means to include the specific documents into the station's document control system.

IV. Plant Support

R1 Radiological Protection and Chemistry (RP&C) Controls

R1.1 Radiological Environmental Monitoring Program

a. Inspection Scope (IP 84750)

The inspectors reviewed the Radiological Environmental Monitoring Program (REMP) and the 1995 Annual Environmental Operating Report (AEOR), and toured selected environmental sampling stations.

b. Observations and Findings

One typographical error was noted in the AEOR concerning the allowable tritium effluent concentration to be released to the environment. The maximum permissible concentration for tritium in an unrestricted area was stated in the AEOR as 3,000,000 pCi/l (picocuries per liter), while 10 CFR Part 20, Appendix B, Table 2, Column 2 stated the concentration as 10^{-3} μCi/ml (equivalent to 1,000,000 pCi/l). The licensee initiated a change request to ensure the correct concentration of 1,000,000 pCi/l would be stated in the 1996 report.

Effluent tritium concentrations in 1995 through May 1996 were significantly lower than the regulatory limit. Environmental samples had been collected and analyzed as required, and missing samples were documented in the AEOR.

The land use census had been conducted as required. Air sampling equipment had current calibration documentation and was in very good operating condition. Training for REMP collectors was effective, and was being transferred into the licensee's overall training program procedures.

c. Conclusions

The inspectors concluded that the REMP staff was well trained, the material condition of the environmental sampling stations was very good, and that there was no discernable radiological impact on the environment from the operation of the Davis-Besse Nuclear Plant.

R1.2 Chemistry Program

a. Inspection Scope (IP 84750)

The inspectors reviewed the licensee's chemistry program including plant water quality, the post accident sampling system (PASS), and the chemistry quality assurance program.

b. Observations and Findings

The licensee's water chemistry program was consistent with the Electric Power Research Institute (EPRI) PWR Primary and Secondary Water Chemistry Guidelines. A review of selected trend records from January 1995 through June 1996 indicated that plant water quality was very good and no significant problems were observed.

PASS sample data reviewed showed agreement with daily Reactor Coolant System samples, and PASS sampling areas were in good material condition. Chemistry instrument quality control chart trends indicated that the instrumentation was stable. In-line instrumentation had a good maintenance history with problems identified and fixed in a reasonable period of time. Radiochemistry calibration sources were current, and laboratory performance in the vendor supplied inter-laboratory cross check program and the licensee's intra-laboratory technician testing was very good. The inspectors observations of chemistry testers indicated that samples were obtained in accordance with procedures, and good chemistry techniques were used to perform sample analysis.

c. Conclusions

The inspectors concluded that the chemistry program effectively implemented program goals, and continued to maintain very good water quality.

R7 Quality Assurance in RP&C Activities

The inspectors reviewed selected QA audits of the chemistry program and found them to be comprehensive. The inspectors noted that the chemistry department response to the QA assessments were timely and appropriate. The inspectors also noted the chemistry department had a very strong QA program.

S2 Status of Security Facilities and Equipment

S2.1 Possible Compromise of Safeguards Information in a Local Area Network (92904)

The licensee identified a potential vulnerability with the handling of safeguards information on one of their personal computers (PC). A PC that had handled safeguards information was configured with a removable hard drive and was attached to a small Local Area Network (LAN). The concern was that LAN software applications could create temporary files of safeguards information that

might reside on non-safeguards protected computers attached to the LAN. Potential Condition Adverse to Quality Report (PCAQR) No. 96-1089 was generated to document and track resolution of the issue.

The licensee, after conducting a search for safeguards information on the LAN PCs in question, found no evidence of a compromise of safeguards information.

The licensee was considering this vulnerability to be generic to the site and was putting together a plan to review if similar situations might be present on other site PCs that had handled safeguards information. Pending licensee completion of this review, this is considered an **unresolved item (50-346/96005-09(DRP))**.

S2.2 Plant Access Restrictions Due to Non-Security Doors Controlled by Card Readers

a. Inspection Scope (81700)

The inspector reviewed the control of non-security doors that were locked and controlled by the security computer and card readers for potential security and safety conflicts.

b. Observations and Findings

About 12 non-security doors were locked and controlled by the security computer and card readers. In case of computer or card reader failure, entry through the doors would have to be by hard key override or open door commands from the alarm stations. This could represent an unnecessary impediment to emergency response by personnel that was not reviewed by those designated in the security plan to review and resolve potential security and safety conflicts.

The non-security doors controlled by the security computer were not inspected and functionally tested on a weekly basis and modifications to such doors were not as closely monitored. Additionally, key issue and control for the non-security doors were not monitored, controlled, or inventoried as stringently as the keys for the security doors.

10 CFR 73.55(d) requires periodic review of security procedures, barriers, etc. to assure they do not represent a potential plant or personnel safety concern. The security plan designated the Station Review Board (SRB) and Company Nuclear Review Board (CNRB) to fulfill this important responsibility. The potential security/safety conflict had not been identified for SRB and CNRB review. Although the doors in question were not security doors, they were controlled by the security computer system.

By the end of the inspection period, the licensee had initiated a joint operations/security departments analysis to review the need for locking non-security doors controlled by the security computer system and present the analysis to the appropriate review board to determine if any situation represented a potential

safety concern. This will be an **inspection followup item** pending review of the licensee's analysis and findings of the review board **(50-346/96005-10(DRS))**.

To assure that the situation noted above did not constitute an immediate safety concern that could not await the analysis and review noted above, the inspector confirmed that the keys for security and non-security doors and locks were issued to the necessary security, operations, and fire brigade personnel.

The designated keys would open doors in case of computer, card reader, or lock failure. The computer commands to open doors functioned on active and inactive doors. The keys were inventoried as required. Bolt cutters were available and could cut the lock shackles if needed, and other bolt cutters were available in case of failure of a single bolt cutter.

c. Conclusions

Security facilities were generally well maintained and security equipment functioned as designed. An analysis of the configuration of non-security doors controlled by the security computer system warranted evaluation to assure that a potential safety concern did not exist.

S2.3 Access Control Computer Upgrade Project

The action plan for the access control (security) computer upgrade project was reviewed. Important milestones appeared to be on schedule. The licensee security staff planned to submit the computer transition security plan to the NRC for review in September 1996, with a projected site implementation date of March 1997.

The licensee's staff was advised to allow at least 4 or more months prior to implementation for NRC review if NRC acceptance of the transition plan is needed before implementation. This time period would be necessary to identify potential problems with the proposal and allow the licensee's staff sufficient time to respond to issues that may be identified. This is an **inspection followup item (50-346/96005-11(DRS))**.

S3 Security and Safeguards Procedures and Documentation

a. Inspection Scope (81700)

The inspector reviewed selected security procedures pertaining to the areas inspected and also reviewed appropriate logs, records and other documents pertaining to the activities inspected.

b. Observations and Findings

The Security Force Training and Qualification (SFT&Q) Plan allowed the Manager, Security to waive medical and physical fitness requirements for security force personnel and allow them to continue to perform duties. Such waivers did not

require evaluation, review, or concurrence by medical services personnel. Additionally, there was no maximum time limit for which such waivers could be granted.

This authority granted in the SFT&Q plan seemed contrary to other provisions of the SFT&Q plan and to 10 CFR Part 73, Appendix B, which identifies minimum medical and physical requirements for personnel to perform security duties.

Resolution of this issue will include review of past licensing related documents for the SFT&Q plan to determine when the waiver authority was requested, if the waiver authority was identified as a plan change, and the reason or justification for the change. This is considered an **unresolved item (50-346/96005-12(DRS))**.

c. Conclusions

Procedures reviewed were of good quality and correctly described the tasks to be performed. Personnel interviewed on post were familiar with procedure requirements applicable to their responsibilities. An unresolved item pertaining to waiver authority for minimum medical and physical requirements was identified. Security procedures were generally written in excellent detail and reviewed on a regular basis.

S4 Security and Safeguards Staff Knowledge and Performance

a. Inspection Scope (81700)

The inspector toured various security posts and observed work in progress. Interviews with security officers were conducted to determine if the officers were knowledgeable of post requirements.

b. Observations and Findings

Personnel interviewed and observed on post were knowledgeable of the post responsibilities and procedures and performed the tasks in accordance with procedural requirements.

c. Conclusion

No performance deficiencies were noted during visits to the security posts.

S7 Quality Assurance in Security and Safeguards Activities

a. Inspection Scope (81700)

The inspector reviewed the most recent Nuclear Assurance audit of the security program and interviewed the lead auditor that conducted the audit. Additionally, self assessment efforts conducted by the security department were reviewed.

b. Observations and Findings

The most recent security program audit by the nuclear assurance staff was thorough, and well documented. Additionally, the security staff had a tour program which addressed many segments of the security program which were routinely evaluated. The program also offered a high degree of flexibility.

c. Conclusions

The security program self assessment efforts were considered a program strength.

S8 Miscellaneous Security and Safeguards Issues (81700, 92904)

S8.1 (Open) Unresolved Item (50-346/95002-02): This item pertained to "ascertaining" the activities of some personnel who had been granted unescorted access but had not been under a behavioral observation program for periods of 30 or more days. These personnel were considered as "exempt" from the requirements. The method for monitoring security badge use and absence from a behavior observation program was very strong except for a limited number of "exempted" personnel. Security badge use was monitored by security computer software and all personnel who do not use their security badges for more than 30 days either had their badges inactivated or their behavior observation coverage was verified. Few errors to date had been noted in the monitoring effort. However, resolution of this issue was still being reviewed by the NRC.

S8.2 (Closed) Inspection Followup Item (50-346/95007-06): This item pertained to the security section not being able to attain its self- identified goal in reference to security door false alarms. Goal attainment in this area, as of June 1995, had not been achieved within the past 18 months. The number of false alarms and required response to such alarms was within the "acceptable" or "better" area of performance as measured by the licensee for the past year.

S8.3 (Closed) Inspection Followup Item (50-346/95007-07): This item pertained to the need to evaluate if additional specific security measures were needed during routine dry spent fuel cask movement to the storage area. This issue was addressed in Sections 2.1.21 and 23.14 of plant procedure DB-NE-06472, "Dry Fuel Storage Loading".

S8.4 (Open) Violation (50-346/95010-04): This item pertained to a violation of the licensee's Fitness-For-Duty (FFD) program by imposing sanctions for a specimen test result that did not meet the threshold of 10 CFR Part 26 or the licensee's program threshold to be identified as a positive test result.

The corrective actions identified in the licensee's letter dated May 20, 1996, were reviewed and had been implemented to identify the sanctions that would be imposed for suspected FFD test specimens that required special testing under the licensee's FFD program and determined to be unacceptable.

However, the FFD training program was not revised to advise new personnel subject to the program of the consequences and sanctions that could be imposed for unacceptable specimen test results from the special testing provisions of the licensee's FFD program. Section 26.21 of 10 CFR Part 26 required personnel to be advised of their responsibilities and possible sanctions.

This issue will remain open pending evaluation of the training need noted above.

S8.5 (Closed) Non-Cited Violation (50-346/95010-05): This item pertained to a non-cited violation for granting unescorted access to a contractor employee before the FFD test results were received. Section 6.2.1.n of Procedure IS-AC-00011, " Protected and Vital Area Badge Issuance and Control" was revised to require the Supervisor-Access Control to review and sign the appropriate form before the form is sent to the personnel activating the security badge.

S8.6 (Closed) Inspection Followup Item (50-346/95010-07): This item pertained to reviewing FFD procedures to identify deficiencies similar to those noted during the December 1995 inspection. Selected FFD procedures were reviewed and no significant deficiencies were noted.

S8.7 FFD Appeal Board Review

During review of the contractor employee access denial in October 1994 and the violation issued for imposing sanctions for circumstances that were not addressed by licensee procedures (See Section S8.4), the initial appeal board review upheld the determination of a positive FFD test result and denial of unescorted access.

The appeal review board personnel were not aware during the initial review that the positive determination by the Medical Review Officer was not in accordance with 10 CFR Part 26 or the licensee program procedures in effect at the time of the access denial (October 1994).

The access denial appeal board will review the circumstances pertaining to the denial based upon the current knowledge that the Medical Review Officer was in error in declaring the initial FFD specimen a "positive" test result under the licensee's existing criteria at the time of the incident.

This will be an **inspection followup item** pending review of the appeal board results **(50-346/96005-13(DRS))**.

S8.8 FFD Chain of Custody

While reviewing corrective actions for closure of the violation addressed in Section S8.1, it was noted that an individual designated by a contractor employee had completed a chain-of-custody form for the employee's FFD split urine sample. The processing of a chain-of-custody form by a designee is not addressed by 10 CFR Part 26 or by the licensee's procedures at the time of occurrence (October 1994).

The licensee allowed the backup laboratory chain-of-custody form to be signed by another person designated by the contractor because the contractor was out of state and requested an appeal review of his access authorization denial. Each form was completed on a different date. The designee completed two chain-of-custody forms because the first form had to be redone because of an error pertaining to the form. When the second form was completed, the FFD staff disposed of the first form, rather than file the form (The laboratory would not accept two forms for one sample).

Subsequent to the incident, the designee provided a letter to the licensee security staff stating in effect that the chain-of-custody form was completed and the FFD sample did not appear to be tampered with.

Section 2.4(h) of Appendix A to 10 CFR Part 26 requires the date and purpose to be documented on the chain-of-custody form each time a specimen is handled or transferred, and every individual in the chain-of-custody shall be identified. Since completion of chain-of-custody forms by designated individuals is not addressed by 10 CFR Part 26, and it is unclear if chain-of-custody forms completed with errors need to be retained by the licensee, rather than the laboratory, this issue is considered an **unresolved item** and will be forwarded to NRR for resolution **(50-346/96005-14(DRS))**.

F8 Miscellaneous Fire Protection Issues (92904)

F8.1 (Closed) Violation (50-346/93019-01): Appendix R required emergency lighting battery packs not properly maintained. In response, plant personnel began initiating Potential Condition Adverse to Quality Reports when emergency lighting battery packs were identified as being inoperable. Additional management oversight of the surveillance activities associated with the battery packs also occurred. Subsequent NRC walkdowns since that time have not identified further battery pack problems other than isolated occurrences.

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 August 14, 1996. 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. K. Wood, Vice President, Nuclear
J. H. Lash, Plant Manager
R. Donnellon, Director, Engineering & Services
T. J. Myers, Director, Nuclear Assurance
L. M. Dohrmann, Manager, Quality Services
R. C. Zyduck, Manager, Design Basis Engineering
J. L. Michaelis, Manager, Maintenance
J. L. Freels, Manager, Regulatory Affairs
G. Gillespie, Superintendent, Chemistry
D. Eshelman Manager, Operations
W. Molpus, Manager, Nuclear Training
D. Wuokko, Supervisor, Nuclear Regulatory Affairs
D. Schreiner, Supervisor ISE
R. Coad, Superintendent, RP
R. Scott, Manager, RP

INSPECTION PROCEDURES USED

IP 37551:	Onsite Engineering
IP 61726:	Surveillance Observation
IP 62707:	Maintenance Observation
IP 71707:	Plant Operations
IP 81700:	Physical Security Program
IP 84750:	Radioactive Waste Treatment and Effluent and Environmental Monitoring
IP 92901:	Followup - Operations
IP 92902:	Followup - Maintenance
IP 92903:	Followup - Engineering
IP 92904:	Followup - Plant Support

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-346/96005-01	URI	Shift Manager Proficiency Watches
50-346/96005-02	IFI	Tech Spec Revision on Work Hours Requirements
50-346/96005-03	URI	Emergency Ventilation System Testing
50-346/96005-04	VIO	Heavy Load Lifted Over Open Reactor Vessel
50-346/96005-05	IFI	Security Related USAR Inconsistencies
50-346/96005-06	IFI	Fuel Reconstitution Activities Not Addressed in USAR
50-346/96005-07	IFI	Makeup Pump Not Position Suction Head Requirements
50-346/96005-08	VIO	Safety Evaluation Timeliness
50-346/96005-09	URI	Possible Compromise of Safeguards Information on a Local Area Network (LAN)
50-346/96005-10	IFI	Non-Security Doors Controlled by Security Computer System
50-346/96005-11	IFI	NRC Review of Security Computer Transition Plan
50-346/96005-12	URI	Waivers For Minimum Physical and Medical Requirements For Security Force Members
50-346/96005-13	IFI	Second Appeal Board Review of an Access Authorization Denial Decision
50-346/96005-14	URI	Chain-of-Custody Forms

Closed

50-346/93019-02	VIO	Failure to assure proper equipment configuration as a result of inadequate configuration management
50-346/93019-01	VIO	Appendix R required emergency lighting battery packs not properly maintained
50-346/93024-02	IFI	Clarification of tech specs 3.6.3.1 and 3.3.2.2
50-346/94005-01	IFI	M&TE calibrated using non-approved standards
50-346/95005-02	IFI	Minor material condition problems associated with passive inplant equipment installations
50-346/95005-04	IFI	Station review board not properly trained to conduct reviews of dry cask storage related issues
50-346/95005-05	IFI	Dry cask storage licensing/design documents not included in licensee's document control system
50-346/95007-06	IFI	Attainment of self established goal for false alarms
50-346/95007-07	IFI	Routine security measures for spent fuel dry cask movements
50-346/95010-05	NCV	Access granted before fitness-for-duty test results were received
50-346/95010-07	IFI	Fitness-for-duty procedure review
50-346/96002-06	URI	Safety evaluation timeliness
50-346/96003-03	URI	Heavy load lifted over open reactor vessel

Discussed

50-346/95002-02	URI	Ascertaining of Activities For Personnel Absent From a Behavioral Observation Program
50-346/95010-04	VIO	Imposing Sanctions Not Addressed by the Fitness-For- Duty Program

LIST OF ACRONYMS USED

mCi/ml	micro-curies per milliliter
AB	Auxiliary Building
AEOR	Annual Environmental Operating Report
AFW	Auxiliary Feedwater
ALARA	As Low As Reasonably Achievable
ASME	American Society of Mechanical Engineers
BAAT	Boric Acid Addition Tank
BWST	Boric Water Storage Tank
CAC	Containment Air Cooler
CDF	Core Damage Frequency
CFR	Code of Federal Regulations
CNRB	Company Nuclear Review Board
CR	Control Room
DHR	Decay Heat Removal
dpm	disintegrations per minute
EDG	Emergency Diesel Generator
ECCS	Emergency Core Cooling System
EHC	Electro-hydraulic control
EOP	Emergency Operating Procedure
EPRI	Electric Power Research Institute
ESF	Engineered Safety Feature
EVS	Emergency Ventilation System
FFD	Fitness-For-Duty
HPI	High Pressure Injection
ICS	Integrated Control System
IFI	Inspection Followup Item
IP	Inspection Procedure
IPE	Individual Plant Evaluation
IR	Inspection Report
ISI	inservice Inspection
LAN	Local Area Network
LAR	Licensee Amendment Request
LER	Licensee Event Report
LPI	Low Pressure Injection
MPR	Mechanical Penetration Room
MWDT	Miscellaneous Waste Drain Tank
MWO	Maintenance Work Order
Msv	milli-Sievert
M&TE	Measuring and Test Equipment
MUP	Makeup Pump
MUT	Makeup Tank
NCV	Non-Cited Violation
NDE	Non-Destructive Examination
NPB	Negative Pressure Boundary
NPS	Nuclear Power Station
NRC	Nuclear Regulatory Commission

OCA	Owner Controlled Area
PASS	Post Accident Sampling System
PC	Personnel Computer
PCAQR	Potential Condition Adverse to Quality Report
pCi/l	pico-curies per liter
PWR	Pressurized Water Reactor
PWST	Primary Water Storage Tank
QA	Quality Assurance
QA	Quality Assurance
QC	Quality Control
RCS	Reactor Coolant System
REMP	Radiological Environmental Monitoring Program
RMSA	Radioactive Materials Storage Area
RP	Radiation Protection
RP&C	Radiation Protection and Chemistry
RVHLT	Reactor Vessel Head Lifting Tripod
SFAS	Safety Features Actuation System
SFT&Q	Security Force Training and Qualification
SRB	Station Review Board
SRO	Senior Reactor Operator
STA	Shift Technical Advisor
TS	Technical Specification
USAR	Updated Safety Analysis Report
VIO	Violation