U.S. NUCLEAR REGULATORY COMMISSION

REGION I

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Facility:	James A. FitzPatrick Nuclear Power Plant
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EXECUTIVE SUMMARY

James A. FitzPatrick Nuclear Power Plant
NRC Inspection Report 50-333/98-04

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covered a six week period of resident inspection and the results of announced security and emergency preparedness inspections by region based specialists.

Operations

- On August 3, 1998, improper return of the A condensate pump to service following maintenance resulted in a feedwater transient and automatic low reactor water level scram. The cause was attributed to a technically incorrect pump restoration procedure. Additionally, licensee personnel including engineering, operations and management, did not recognize the plant operational risk associated with the pump restoration. The incorrect plant operating procedure was a licensee identified and corrected violation and is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. **(NCV 50-333/98003-01)** (Section O1.1)

- Operation crew response, including abnormal operating procedure and emergency operating procedure implementation, to the August 3, 1998, low reactor water level scram was appropriate. (Section O1.1)

- On July 31, 1998, during a operations evolution to collect boundary valve leakage to a 55 gallon drum, the drum overflowed onto a motor control center associated with the high pressure coolant injection (HPCI) system resulting in the HPCI system becoming inoperable. The cause of the drum overflowing was that operators incorrectly estimated the valve leakage rate and did not monitor the drum status, leaving the drum unattended. Additionally, station procedures do not provide any cautions regarding draining systems. (Section O1.2)

- The inspectors observed plant shutdown and startup activities on August 9 and 18, 1998. During control room observations, operator attentiveness, procedure adherence, shift turnovers, log keeping, and control of activities were found to be good. Supervisory oversight and communication were good. In-plant operators were knowledgeable of system and equipment functions. (Section O1.3)

Plant Support

- Emergency preparedness (EP) emergency equipment surveillances and communication tests were performed as required and the EP facilities were determined to be in a good state of operational readiness. Emergency response organization members were trained as required. The licensee's emphasis on training, including drill participation, the number of drills conducted, and the maintenance of respirator qualifications, was determined to be a strength. The EP

program audits were thorough and the reports were useful for licensee management to assess the effectiveness of the EP program. The resources invested into the audit were indicative of the licensee's commitment to perform an effective assessment of the EP program. (Sections P1-8)

- The licensee was conducting security and safeguards activities in a manner that protected public health and safety in the areas of alarm stations, communications, protected area access control of personnel and packages and protected area access control of vehicles. This portion of the program as implemented, met the licensee's commitments and NRC requirements. However, the inspectors identified a violation of NRC requirements in the area of protected area access control of vehicles. **(VIO 50-333/98004-02)** The licensee's security facilities and equipment in the areas of protected area assessment aids, protected area detection aids, and personnel search equipment were determined to be well maintained and reliable and were able to meet the licensee's commitments and NRC requirements. (Sections S1-7)

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ATTACHMENTS

Report Details

Summary of Plant Status

The unit began this inspection period at 100 percent reactor power. On July 30, 1998, reactor power was reduced to 70 percent due to high motor current amps on the "A" condensate pump. On August 3, 1998, the reactor scrammed due to a feedwater transient while returning the "A" condensate pump to service following maintenance. The plant was placed in cold shutdown to complete several equipment maintenance deficiencies. On August 9, 1998 the reactor was taken critical. On August 12, 1998, the plant was shutdown to repair main steam isolation valve packing leakage. On August 18, 1998, the reactor was made critical and the plant was returned to power operation on August 20, 1998. The plant was returned to full power on August 22, 1998.

I. Operations

O1 Conduct of Operations[1]

O1.1 Automatic Low Water Level Reactor Scram During Restoration of a Condensate Pump

a. Inspection Scope (71707)

On August 3, 1998, an automatic reactor scram occurred due to a feedwater transient. The inspector observed licensee followup actions taken in response to the scram including procedure use and communications, reviewed applicable abnormal operating and emergency operating procedures and interviewed shift operators and work control personnel. The licensee's post transient evaluation was reviewed and applicable post transient data sheets were evaluated. Shift operator logs, licensee evaluations of the effect on the condensate and feedwater systems of water hammer effects from the transient and licensee evaluations of the reactor core isolation cooling (RCIC) and high pressure coolant injection (HPCI) response were reviewed. Additionally, the protective tagging record and work activities associated with the replacement of the condensate pump were evaluated.

b. Observations and Findings

On August 3, 1998 at 5:27 p.m., an automatic reactor scram occurred while operating at approximately 70 percent power due to low reactor pressure vessel water level following a degradation in feedwater flow from improper restoration of a condensate pump to service. By design, the high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) pumps started on low reactor vessel water level.

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[1]Topical headings such as O1, M8, etc., are used in accordance with the NRC standardized reactor inspection report outline. Individual reports are not expected to address all outline topics.

Operator response to the event was appropriate. Operators noted reactor pressure vessel (RPV) level lowering, and received the low level annunciator in the control room. Additional alarms received in the control room were the condensate pump discharge and condensate booster pump suction pressure low alarms. Control room operators attempted to but were unable to restore reactor vessel water level by taking manual control of the feedwater pumps and a manual reactor scram was inserted. However, the timing was such that the automatic reactor protection system low reactor water level trip caused the scram just prior to the insertion of the manual scram. The licensee entered cold shutdown to complete several maintenance items including main steam isolation valve limit switch adjustments, traversing incore probe containment isolation valve replacement and repair of a leaking residual heat removal system valve.

Based on the inspectors review of the post transient evaluation, and emergency operating and abnormal operating procedures, operator response to the transient was determined to be appropriate.

The inspector reviewed the licensee's evaluation of the RCIC and HPCI injection signals. Due to reactor vessel water level recovery, only the RCIC pump injected. The reason that HPCI did not inject was that the reactor pressure vessel water level recovered prior to the relay to open the injection valve was energized. The licensee's evaluation demonstrated that systems operated as designed. The inspector determined that the plant responded as designed following the automatic scram and the transient response was bounded by previous analysis contained in the Final Safety Analysis Report (FSAR).

The degradation of feedwater flow was due to an inadequate filling and venting operation for the "A" condensate pump during restoration of the pump following pump replacement. Operators were using operating procedure (OP)-3 section G.1, Condensate Pump Startup After Maintenance, to fill and vent the pump. When the condensate pump suction valve was partially opened, to allow filling of the suction piping and pump well, the operating condensate pumps became air bound resulting in a low suction pressure trip of the "B" condensate booster pump. This caused one of the two operating condensate booster pumps to trip on low suction pressure.

The cause for the event was that the procedure provided inadequate written instruction. Specifically, OP-3, Condensate System, provided technically inaccurate written instructions for placing a condensate pump in service following maintenance activities where the system had been drained. The procedure was written with the assumption that air trapped in the pump casing would be drawn into the main condenser. The procedure contained a note which stated that air trapped in the pump casing will be drawn into the main condenser and that main condenser vacuum will cause the pump casing to fill up to the discharge check valve. Contrary to this, air trapped in the pump is entrained in the condensate suction header flow path. Previously, condensate pumps had been successfully returned to service after maintenance using the same written instructions. However, the previous maintenance activities, for example, pump repack, did not require a complete drain of the condensate pump well and system piping and did not cause

any significant system perturbations. Personnel involved in returning the pump to service did not question the procedure based on the prior successful performance of pump restoration. Additionally, other licensee personnel involvement, including engineering and management was not sufficient to recognize the plant operational risks associated with the pump restoration. The incorrect plant operating procedure was a licensee identified and corrected violation and is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. **(NCV 50-333/98003-01)**

The licensee implemented several corrective actions which included the completion of a post transient evaluation and plant operating review committee assessment of the event. The fill and vent procedure for the condensate pump was corrected. An engineering evaluation and walkdown of the feedwater and condensate system to assess the affects of the resulting transient was performed which identified no operability concerns. The licensee is continuing to evaluate lessons learned to develop more substantial corrective actions.

c. Conclusions

On August 3, 1998, improper return of the A condensate pump to service following maintenance resulted in a feedwater transient and automatic low reactor water level scram. The cause was attributed to a technically incorrect pump restoration procedure. Additionally, licensee personnel including engineering, operations and management, did not recognize the plant operational risk associated with the pump restoration. The incorrect plant operating procedure was a licensee identified and corrected violation and is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. **(NCV 50-333/98003-01)**

Operation crew response, including abnormal operating procedure and emergency operating procedure implementation, to the August 3, 1998, low reactor water level scram was appropriate.

01.2 Inoperable High Pressure Coolant Injection System

a. Inspection Scope (71707)

On July 31, 1998, the high pressure coolant injection system was declared inoperable due to a direct current (DC) ground on the station battery bus. The inspector reviewed the operator response and portions of post event activities. The inspectors also reviewed the licensee's critique of the event.

b. Observations and Findings

On July 31, 1998, at 7:20 a.m., the "HPCI aux oil pump overload or control power loss" alarm annunciated in the control room. An operator responded and identified that water was overflowing from a 55 gallon drum. The water flowed to the top of a motor control center (MCC) which provided power to HPCI auxiliaries. The HPCI system was declared inoperable and the HPCI auxiliary lube oil pump breaker was

opened for ground isolation. Electricians opened and cleaned the MCC and other breaker cubicles were inspected for moisture intrusion.

Previously, on July 31, 1998, at approximately 5:00 a.m., operators were implementing a protective tagging to enable repairs to the service water system following check valve testing. During the evolution to isolate and drain a portion of the system for maintenance, boundary valve leakage was routed using a hose to a 55 gallon drum. The 55 gallon drum overflowed onto the floor and drained onto the MCC located in the east crescent room. The water entered the MCC through a cable penetration conduit seal located on the top of the MCC.

The cause of the drum overflowing was that operators incorrectly estimated the valve leakage rate and did not monitor the drum status, leaving the drum unattended. Additionally, station procedures do not provide any cautions regarding draining systems. Licensee corrective actions include requiring continuous monitoring of drain path to fixed volume containers and training was conducted for operators. Procedures were revised to provide specific guidance and precautions for similar evolutions.

c. Conclusions

On July 31, 1998, during a operations evolution to collect boundary valve leakage to a 55 gallon drum, the drum overflowed onto a motor control center associated with the high pressure coolant injection (HPCI) system resulting in the HPCI system becoming inoperable. The cause of the drum overflowing was that operators incorrectly estimated the valve leakage rate and did not monitor the drum status, leaving the drum unattended. Additionally, station procedures do not provide any cautions regarding draining systems.

01.3 Observations of Control Room Activities

a. Inspection Scope (71707)

During the inspection period, the plant operated at various power levels. The inspectors observed the conduct of activities in the control room and plant, to evaluate operator attentiveness, procedure adherence, supervisory oversight, shift turnovers, communication, log keeping, and control of activities.

b. Observations and Findings

On August 3, while returning the "A" condensate pump to service, following corrective maintenance, the plant scrammed on low reactor water level. The cause was the result of the system not being properly filled and vented. While preparations were being made to restart the plant on August 8, 1998, the licensee determined that the current core analysis contained errors that made the exclusion region, as defined in core operating limits report, incorrect and non-conservative. The start-up was delayed until the calculations could be corrected and plant procedures changed. On August 9, 1998, the reactor was made critical following

the completion of a safety evaluation by the licensee that determined that the plant could start-up and remain at low power while corrections were being made. On August 12, after investigating leakage into the standby gas treatment system from the main steam leakage collection system, the licensee commenced a plant shutdown to fix an excessive packing leak on the "A" outboard main steam isolation valve. On August 18, the reactor was made critical. However, during power accession on August 19, after observing sparks in the exciter housing for the generator, the operators tripped the main turbine. The reactor remained critical and the plant was operated on the bypass valves while repairs were made to the generator exciter. On August 20, 1998, repairs were completed and the plant was returned to full power on August 22, 1998.

The inspectors determined that operator's attentiveness, communications, procedure use and supervisory oversight during the above activities were good. The inspectors noted good use of self and peer checking as well as good procedure place keeping practices. Good oversight was noted during control rod manipulations. The inspectors reviewed the operator and supervisor's logs and found them to be acceptable. Technical specification (TS) entry and exit, major equipment status changes, and surveillance tests were properly recorded. Additionally, operator response to overhead annunciators were prompt, and distractions in the control room were kept to a minimum.

The inspectors accompanied plant operators on routine rounds to assess their knowledge of plant systems, ability to identify plant deficiencies, adherence to radiation and security requirements, and to assess housekeeping. The operators were knowledgeable of plant systems and equipment functions. The inspectors noted that radiological protection and security requirements were adhered to and housekeeping issues were corrected when found.

c. Conclusions

The inspectors observed plant shutdown and startup activities on August 9 and 18, 1998. During control room observations, operator attentiveness, procedure adherence, shift turnovers, log keeping, and control of activities were found to be good. Supervisory oversight and communication were good. In-plant operators were knowledgeable of system and equipment functions.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments on Maintenance activities (62707)

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

- Reactor Analyst Procedure (RAP)-7.1.05E, fuel moves
- Work Request (WR) 97-7945, west crescent area unit cooler maintenance
- WR 97-0764, condensate pump replacement

- WR 97-06975, receive and inspect new fuel
- WR 97-05111, main steam isolation valve limit switch adjustment
- WR 98-03014, replace traversing incore probe ball valve

The inspectors observed that the work performed to the above work requests and procedures was conducted satisfactorily.

M1.2 General Comments on Surveillance Activities (61726)

The inspectors observed all or portions of the following surveillance activities:

- Surveillance Test (ST)-6H, Standby Liquid Control Quarterly Operability Test
- Instrument Surveillance Procedure (ISP)-225, High Pressure Coolant Injection Steam Line Pressure Transmitter Calibration
- ST-5D, Average Power Range Monitor Calibration
- ST-21F, Main Turbine Overspeed Trip Device and Mechanical Trip Valve Test
- ST- 26J, Heatup and Cooldown Temperature Checks

The licensee conducted the above surveillance activities appropriately and in accordance with procedural and administrative requirements. As applicable, good coordination and communication with the control room were observed during performance of the surveillance.

M8 Miscellaneous Maintenance Issues (92702)

M8.1 (Closed) Violation 50-333/96006-01: failure to follow procedures during maintenance. During the performance of a 345kV relay calibration, two terminals were inadvertently shorted, which tripped the main generator output breakers causing a turbine trip and reactor scram. The risk significance of the maintenance activity was not recognized by the licensee during the work planning. When it was recognized, it was not communicated to the control room operators or maintenance supervision. Corrective actions taken by the licensee included training and procedure changes. The procedures which govern the work control, work package planning and rolling work schedule have been revised. The instrument maintenance procedure, (IMP)-G20, Generic Troubleshooting and Maintenance Procedure, was changed to add requirements for protective measures to be taken to protect against accidental shorting and grounding of adjacent terminals. The inspectors reviewed the procedure changes and training records. In addition, the risk assessment process for work control was reviewed as part of the maintenance rule inspection, NRC Inspection Report No. 50-333/97-80, and found to be acceptable. The inspectors concluded that the licensee's corrective actions had been appropriate.

IV. Plant Support

P1 Conduct of Emergency Preparedness Activities

P1.1 Response to Actual Event

Since the last emergency preparedness (EP) program inspection (January 1997), there have not been any events that required an emergency classification to be made. Therefore, there was no assessment in the area of event response.

P1.2 Effectiveness of Licensee Controls in Identifying, Resolving and Preventing Problems

a. Inspection Scope (82701)

The inspector reviewed the licensee's processes for identifying and tracking EP-related issues and assessed the effectiveness of problem resolution.

b. Observations and Findings

The licensee has numerous programs for problem identification which include audits, self-assessments, drill or exercise comments, and training feed back forms. Issues identified from these sources were in the licensee's tracking system. The EP-related issues were reviewed (those that had been closed in the past year as well as those that are currently open) and it was determined that the licensee has a low threshold for problem identification and the issues in the tracking system were appropriately prioritized.

Since the last program inspection, the licensee had enhanced the EP self assessment process. In addition to the criteria in the licensee's emergency planning program self assessment procedure, the licensee developed a schedule using various evaluators to conduct in-depth reviews of specific EP-related areas. Recently performed reviews were evaluated by the inspector and determined to be thorough and comprehensive.

c. Conclusions

Based upon generally good licensee performance during drills, the absence of repeat audit findings, and no adverse trends in the EP program, the licensee's problem identification and corrective action processes were determined to be effective.

P1.3 Public Information

Telephone book inserts, public postings, and information booklets that were distributed throughout the emergency planning zone (EPZ) contained sufficient information about responding to a radiological emergency. The licensee received conformation that the county identifies new residents or establishments within the EPZ to ensure a thorough distribution of the information. There was good coordination between the licensee and county in issuing press releases to provide

advanced notice to the public regarding EP-related activities such as siren testing and information distribution. Media training materials were delivered to the local media to ensure that they had information pertaining to media interest in the event of an emergency.

P2 Status of EP Facilities, Equipment, Instrumentation and Supplies

a. Inspection Scope (82701)

The inspector conducted an audit of emergency equipment in the control room, the operations support center (OSC), the technical support center (TSC), the emergency operations facility (EOF), and the joint news center (JNC). The inspector reviewed documentation of emergency equipment surveillances and communications tests conducted during the past year for completeness and accuracy.

b. Observations and Findings

A brief audit of equipment and supplies in the control room, the OSC, the TSC, and the EOF indicated that specified equipment was present. Selected radiological monitoring instrumentation in the facilities were checked to verify that batteries were charged and calibrations were current. The facilities were well kept and orderly, thus ready for immediate activation. A review of completed surveillances for the facilities and communications tests for 1998 indicated that they were completed as required. Discrepancies were documented and promptly resolved.

c. Conclusions

Emergency equipment surveillances and communication tests were performed as required and the facilities were determined to be in a good state of operational readiness.

P3 EP Procedures and Documentation

a. Inspection Scope (82701)

The inspector assessed the process that the licensee used to review and change the emergency plan implementing procedures (IPs). The inspector also reviewed recent IP changes to assess the impact on the effectiveness of the emergency plan (Plan).

b. Observations and Findings

The licensee's 10 CFR 50.54(q) review (effectiveness review) process was well controlled. Administrative procedure (AP)-02.04, "Control of Procedures," provided criteria for the effectiveness reviews which included effects upon the Final Safety Analysis Report and the Plan. Annual Plan reviews were performed by the licensee. Implementing procedures (IPs), which are required to be reviewed at least every five years, were being reviewed almost annually as a result of training and drill

comments. The inspector reviewed the bases for several IP changes and determined that the changes were acceptable.

Prior to this inspection, the inspector conducted an in-office review of recent IP changes. Based upon the licensee's determination that the changes did not decrease the overall effectiveness of the Plan and after limited review of the changes, no NRC approval is required in accordance with 10 CFR 50.54(q). The list of reviewed procedures is listed in Attachment 2.

c. Conclusions

A review of the licensee's procedure change review process, and a sampling of recent procedure changes, indicated that a good procedure control program was being implemented.

P5 Staff Training and Qualification in EP

a. Inspection Scope (82701)

The inspector reviewed records, procedures, and training requirements to evaluate the licensee's emergency response training program.

b. Observations and Findings

Requalification training records for several emergency response organization (ERO) members were checked to verify that they had received annual classroom training and had participated in a drill within the past two years as required by Training Procedure (TP)-4.05, "Emergency Response Training." Likewise, records for newly qualified ERO members indicated that they had received the required training. The inspector verified that sufficient numbers of maintenance personnel were qualified to don respirators. (A Quality Assurance audit sample indicated that greater than 80% of maintenance personnel were qualified.) Also, a review of licensed operator simulator scenarios indicated that operators had been evaluated on identifying and classifying the four emergency classifications.

The inspector observed several examples of the licensee's emphasis on emergency response training. Annual ERO requalification training is conducted via the classroom instead of by self-study or computer based training. The requirement for biennial drill participation can be met only by playing in a drill - no credit is given for being an observer or controller. To support the drill participation requirement, the licensee conducts quarterly drills which permits ERO members to develop necessary skills. Chemistry technicians were rotated through the three post accident sampling system monthly surveillances to maintain proficiency in taking samples. As mentioned above, the licensee ensured that ample numbers of maintenance personnel were respirator qualified. Finally, the licensee had the option of de-activating individuals' site access badges for not maintaining ERO qualifications.

The annual emergency action level (EAL) training for state and county officials was conducted in accordance with the Plan.

c. Conclusion

ERO members were trained as required. The licensee's emphasis on training, including drill participation, the number of drills conducted, and the maintenance of respirator qualifications, was determined to be a strength.

P6 EP Organization and Administration

Since the last program inspection, several personnel changes have occurred to the EP department. The EP training administrator and department clerk have changed. Also, the EP coordinator (EPC) was assigned to a task force to address the Year 2000 computer problem, in addition to his normal duties. The inspector observed no adverse impact on the EP program as a result of these changes. The EP staff continues to receive strong management support as evidenced by cooperation from supporting departments (operations, maintenance, public information, training, radiation protection) to manage and implement an effective EP program.

P7 Quality Assurance (QA) in EP Activities

a. Inspection Scope (82701)

The inspector interviewed the lead QA auditor, reviewed the 1996 and 1997 QA audit reports and the 1997 audit checklist to assess the effectiveness of the audits of the EP program.

b. Observations and Findings

The licensee allots significant resources to conduct its audits. The EP audit teams for the 1996 and 1997 audits consisted of several persons (being involved one to two weeks), at least one of whom possessed technical expertise. The audits were conducted over approximately a two week period but also included observations from surveillances performed throughout the year. The audit plan directed that various aspects of the EP program be investigated over a three year period. The checklist used for the 1997 audit was determined to be sufficiently detailed to assess the program. The 1996 and 1997 audit reports were thorough and the observations supported the conclusions. The subjects specified by 10 CFR 50.54(t) were addressed and the reports contained recommendations for program enhancement. There were no repeat recommendations from 1996 to 1997. The reports were distributed to the appropriate levels of licensee management and the portions of the reports addressing the offsite interface were sent to offsite officials.

c. Conclusions

The EP program audits were thorough and the reports were useful for licensee management to assess the effectiveness of the EP program. The resources

invested into the audit were indicative of the licensee's commitment to perform an effective assessment of the EP program.

P8 Miscellaneous EP Issues

P8.1 Updated Final Safety Analysis Report (UFSAR) Inconsistencies

A recent discovery of a licensee operating its facility in a manner contrary to the UFSAR description highlighted the need for a special focused review that compares plant practices, procedures, and/or parameters to the UFSAR description. Section 13.8.5 of the UFSAR provides a brief statement about the Plan. Since the UFSAR does not specifically include EP requirements, the inspector compared several licensee activities to the Plan. The inspector specifically reviewed EAL training for state and county officials, public information, and ERO training. No discrepancies were noted.

S1 Conduct of Security and Safeguards Activities

a. Inspection Scope (81700)

Determine whether the conduct of security and safeguards activities met the licensee's commitments in the NRC-approved security plan (the Plan) and NRC regulatory requirements. The security program was inspected during the period of July 20-23, 1998. Areas inspected included alarm stations; communications; protected area (PA) access control of personnel and packages and PA access control of vehicles.

b. Observations and Findings

Alarm Stations. The inspectors observed operations of the Central Alarm Station (CAS) and the Secondary Alarm Station (SAS) and verified that the alarm stations were equipped with appropriate alarms, surveillance and communications capabilities. Interviews with the alarm station operators found them knowledgeable of their duties and responsibilities. The inspectors also verified, through observations and interviews, that the alarm stations were continuously manned, independent and diverse so that no single act could remove the plants capability for detecting a threat and calling for assistance and the alarm stations did not contain any operational activities that could interfere with the execution of the detection, assessment and response functions.

Communications. The inspectors verified, by document reviews and discussions with alarm station operators, that the alarm stations were capable of maintaining continuous intercommunications, continuous communications with each on duty security force member (SFM), and alarm station operators were testing communication capabilities with the local law enforcement agencies as committed to in the Plan.

Protected Area (PA) Access Control of Personnel and Hand-Carried Packages. On July 21 and 22, 1998, during peak activity periods, the inspectors observed personnel and package search activities at the personnel access portal. The inspectors determined, by observations, that positive controls were in place to ensure only authorized individuals were granted access to the PA and that all personnel and hand carried items entering the PA were properly searched.

PA Access Control of Vehicles. On July 22, 1998, the inspectors observed vehicle access control activities at the main vehicle access control entry point. The observations included SFM's verification of vehicle authorization and escort requirements and the performance of vehicle searches prior to granting PA access. The inspectors concluded that vehicles were being controlled and maintained in accordance with the Plan and applicable procedures. However, the inspectors observed the performance of an inadequate vehicle search. Specifically, containers in the passenger compartment (cab) were not opened, a container on the undercarriage (flare container) was not opened, and the cab to the vehicle was not raised to allow for a thorough search of the engine compartment. This is a violation of NRC requirements. **(VIO 50-333/98004-02)**

Upon identification of the violation by the inspectors, the licensee relieved the SFM from his post and another SFM was assigned to re-search the vehicle. Successful completion of the second search of the vehicle brought the licensee into full compliance. The individual that was relieved was sent directly to the training staff and was provided remedial training on vehicle search activities. The cause of this event was personnel performance failure. To reduce the probability of recurrence, the licensee committed to reinforce proper search requirements by retraining the entire security force by July 30, 1998. This event and associated corrective actions were documented by the licensee in Deficiency Event Report (DER) 98-01656.

c. Conclusions

With the exception of the above noted violation, the licensee was conducting its security and safeguards activities in a manner that protected public health and safety and that this portion of the program, as implemented, met the licensee's commitments and NRC requirements.

S2 Status of Security Facilities and Equipment

a. Inspection Scope (81700)

Areas inspected were PA assessment aids; PA detection aids, personnel search equipment and testing, maintenance and compensatory measures.

b. Observations and Findings

Assessment Aids. On July 22, 1998, the inspectors evaluated the effectiveness of the assessment aids, by observing, in both the CAS and SAS, on closed circuit television (CCTV), a SFM conducting a walkdown of the PA. The assessment aids picture quality and zone overlap were generally very good. However, the inspectors noted that one monitor was jittery, one monitor displayed a washed out picture and one monitor did not display the applicable zone. The licensee was very responsive to the inspectors' concerns and immediately implemented an interim instruction, pending correction of these minor problems. Additionally, to ensure Plan commitments are satisfied, the licensee has procedures in place requiring the implementation of compensatory measures in the event the alarm station operator is unable to properly assess the cause of an alarm.

PA Detection Aids. On July 22, 1998, the inspectors observed a SFM conducting performance testing of the perimeter intrusion detection system (PIDS). The testing consisted of 25 intrusion attempts in 18 zones, which resulted in the SFM being detected in each intrusion attempt. The inspectors determined that the equipment was functional and effective, and met the requirements of the Plan.

Personnel and Package Search Equipment. The inspectors observed both the routine use and the weekly performance testing of the licensee's personnel and package search equipment in both the warehouse and the personnel access portal.

The inspectors determined, by observations and procedural reviews, that the search equipment performed in accordance with licensee procedures and Plan commitments.

Testing, Maintenance and Compensatory Measures. The inspectors reviewed testing and maintenance records for the previous 6 months. Maintenance records revealed only 2 current open items. The records indicate a good working relationship with both Instrumentation and Controls and Maintenance, as evidenced by the minimal requirement for compensatory measures due to repairs being accomplished in a timely manner.

c. Conclusions

The licensee's security facilities and equipment were determined to be well maintained and reliable and were able to meet the licensee's commitments and NRC requirements.

S3 Security and Safeguards Procedures and Documentation

a. Inspection Scope (81700)

Areas inspected were implementing procedures and security event logs.

b. Observations and Findings

Security Program Procedures. The inspectors verified that the procedures were consistent with the Plan commitments, and were properly implemented. The verification was accomplished by reviewing selected implementing procedures associated with PA access control of personnel and packages, testing and maintenance of personnel search equipment and PA access control of vehicle.

Security Event Logs. The inspectors reviewed the Security Event Log for the previous six months. Based on this review, and discussion with security management, it was determined that the licensee appropriately analyzed, tracked, resolved and documented safeguards events in accordance with the requirements of 10 CFR Part 73.71.

c. Conclusions

Security and safeguards procedures and documentation were being properly implemented. Event Logs were being properly maintained and effectively used to analyze, track, and resolve safeguards events.

S4 Security and Safeguards Staff Knowledge and Performance

a. Inspection Scope (81700)

Area inspected was security staff requisite knowledge.

b. Observations and Findings

Security Force Requisite Knowledge. The inspectors observed a number of SFM's in the performance of their routine duties. These observations included alarm station operations, personnel and package searches, vehicle searches and intrusion detection system testing. Additionally, the inspectors interviewed SFMs and based on the responses to the inspectors' questioning, determined that the SFMs were knowledgeable of their responsibilities and duties, and could effectively carry out their assignments.

c. Conclusions

The SFMs adequately demonstrated that they have the requisite knowledge necessary to effectively implement the duties and responsibilities associated with their position.

S5 Security and Safeguards Staff Training and Qualifications (T&Q)

a. Inspection Scope (81700)

Areas inspected were security training and qualifications, contingency drills and training records.

b. Observations and Findings

Security Training and Qualifications. On July 22, 1998, the inspector randomly selected and reviewed T&Q records of 5 SFMs. Physical and requalification records were inspected for armed and supervisory personnel. The results of the review indicated that the security force was being trained in accordance with the approved T&Q plan.

Contingency Drills. On July 22, 1998, the inspectors observed the performance of a force on force contingency drill. Prior to the initiation of the drill, the participants were briefed by the training staff, with a strong emphasis on safety. The drill was properly controlled and the participants demonstrated a very good response capability. The drill critique, held immediately after the drill, was well organized and effective. Records indicate such drills are scheduled once a week. These drills are a program strength.

Training Records. The inspectors were able to verify, by reviewing training records, that the records were properly maintained, accurate and reflected the current qualifications of the SFMs.

c. Conclusions

Security force personnel were being trained in accordance with the requirements of the T&Q Plan. Training documentation was properly maintained and accurate and the training provided by the training staff was effective.

S6 Security Organization and Administration

a. Inspection Scope (81700)

Areas inspected were management support, effectiveness and staffing levels.

b. Observations and Findings

Management Support. The inspectors reviewed various program enhancements made since the last program inspection, which was conducted in August 1997. These enhancements included the procurement of a new explosive detector for the warehouse, a new ready room for the response force and upgrades to the x-ray units in the main access control point.

Management Effectiveness. The inspectors reviewed the management organizational structure and reporting chain. The Security Manager's position in the organizational structure provides a means for making senior management aware of programmatic needs. Senior management's positive response to requests for equipment, training and resources, in general, has contributed to the effective administration of the security program.

Staffing Levels. The inspectors verified that the total number of trained SFMs immediately available on shift meets the requirements specified in the Plan. However, the inspectors noted that SFMs are presently working a significant amount of overtime due to reduced staffing levels. The inspectors discussed the overtime concerns with security management and were informed, by security management, that to reduce overtime concerns, management has approved the funding for the hiring of seven additional security officers.

c. Conclusions.

The level of management support was adequate to ensure effective implementation of the security program, and was evidenced by the planned hiring of additional security force members and the allocations of resources to support programmatic needs.

S7 Quality Assurance in Security and Safeguards Activities

a. Inspection Scope (81700)

Areas inspected were: audits, problem analyses, corrective actions and effectiveness of management controls.

b. Observations and Findings

Audits. The inspectors reviewed the 1998 QA audit of the fitness-for-duty (FFD), conducted April 13 - May 6, 1998, (Audit No. A98-10J) and the 1998 QA audit of the physical security program, conducted May 26 - June 19, 1998 (Audit No. A98-12J). To enhance the effectiveness of the audits, both audit teams included independent technical specialists.

The FFD audit report identified one Deficiency Event Report (DER) and no recommendations. The DER was associated with the licensee failing to include FFD information in a written agreement between the licensee and a contractor. The inspectors determined that the finding was not indicative of a programmatic weakness and would enhance program effectiveness.

The physical security audit identified eleven DER's and five recommendations. None of the DERs were indicative of programmatic performance issues. Corrective actions associated with the deficiencies, with the exception of those pending Plan changes, have been completed.

Problem Analyses. The inspectors reviewed data derived from the security department's self-assessment program. Potential weaknesses were being properly identified, tracked, and trended.

Corrective Actions. The inspectors reviewed corrective actions implemented by the licensee in response to the QA audit and self-assessment programs. The corrective actions were effective, evidence by a reduction in personnel performance issues and loggable safeguards events.

Effectiveness of Management Controls. The inspectors observed that the licensee has programs in place for identifying, analyzing and resolving problems. They include the performance of annual QA audits, a departmental self-assessment program and the use of industry data such as violations of regulatory requirements identified by the NRC at other facilities, as a criterion for self-assessment.

c. Conclusions

The review of the licensee's Audit program indicated that the FFD and Physical security audit were comprehensive in scope and depth, that the audit findings were reported to the appropriate level of management, and that the program was being properly administered. In addition, a review of the documentation applicable to the self-assessment program indicated that the program was effectively implemented to identify and resolve potential weakness.

S8 Miscellaneous Security Issues

S8.1 Review of Updated Final Safety Analysis Report (UFSAR)

A recent discovery of a licensee operating their facility in a manner contrary to the Updated Final Safety Analysis Report (UFSAR) description highlighted the need for a special focused review that compares plant practices, procedures and/or parameters to the UFSAR description. While performing the inspections discussed in this report, the inspector reviewed the applicable portions of the UFSAR that related to the areas inspected. The inspector verified that the UFSAR wording was consistent with the observed plant practices, procedures and/or parameters.

Since the UFSAR does not specifically include security program requirements, the inspectors compared licensee activities to the NRC-approved physical security plan, which is the applicable document. While performing the inspection discussed in this report, the inspectors reviewed Section 4.1 of the Plan, titled "Protected Area Barriers." The inspectors determined, by observations and procedural reviews, that the PA barrier was being maintained as required in the Plan.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspections results to members of the licensee management at the conclusion of the inspection on September 3, 1998. Also, on July 23, 1998, Mr. P. Frechette, Jr., presented the NRC's inspection findings in the area of security and on July 31, 1998, Mr. D. Silk presented the NRC's inspection findings in the area of emergency preparedness. 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.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Licensee

N. Avrakotos, Emergency Preparedness Coordinator
M. Colomb, Plant Manager
M. Leonard, Corporate Security Manager
D. Lindsey, General Manager, Operations
G. MacCammon, Security Coordinator
D. Ruddy, Director, Design Engineering
T. Teifke, Security Manager
D. Vandermark, Quality Assurance Manager
A. Zaremba, Licensing Manager

NRC

W. Axelson, Deputy Regional Administrator
S. Bajwa, Project Directorate, I-1
R. Crlenjak, Deputy Director, Division of Reactor Projects

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
IP 61726: Surveillance Observations
IP 62707: Maintenance Observations
IP 64704: Fire Protection Program
IP 71707: Plant Operations
IP 71750: Plant Support
IP 81700: Physical Security Program for Power Reactors
IP 82701: Operational Status of the Emergency Preparedness Program
IP 92700: Onsite Follow-up of Written Reports of Nonroutine Events at Power Reactor Facilities
IP 92702: Follow-up on Corrective Actions for Violations and Deviations

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened		
50-333/98004-01	NCV	inadequate procedure contributed to low reactor water level scram
50-333/98004-02	VIO	inadequate vehicle search
Closed		
50-333/98004-01	NCV	inadequate procedure contributed to low reactor water level scram
50-333/96006-01	VIO	failure to follow procedures during maintenance

Discussed
None

LIST OF ACRONYMS USED

AOP	Abnormal Operating Procedure
AP	Administrative Procedure
CAS	Central Alarm System
CCTV	Closed Circuit Television
DC	Direct Current
DER	Deficiency and Event Report
EAL	Emergency Action Level
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedure
EP	Emergency Preparedness
EPC	Emergency Preparedness Coordinator
EPZ	Emergency Planning Zone
ERO	Emergency Response Organization
FFD	Fitness-For-Duty
FSAR	Final Safety Analysis Report
GE	General Electric
HPCI	High Pressure Coolant Injection
IMP	Instrument Maintenance Procedure
IP	Implementing Procedure
JNC	Joint News Center
LER	Licensee Event Report
MCC	Motor Control Center
NRC	Nuclear Regulatory Commission
OP	Operating Procedure
OSC	Operations Support Center
PA	Protected Area
PIDS	Perimeter Intrusion Detection System
Plan	Emergency Plan
QA	Quality Assurance
RCIC	Reactor Coolant Isolation Cooling
RPV	Reactor Pressure Vessel
SAS	Secondary Alarm System
SFM	Security Force Member
ST	Surveillance Test
TP	Training Procedure
T&Q	Training and Qualification
the Plan	NRC-Approved Physical Security Plan
TS	Technical Specifications
TSC	Technical Support Center
UFSAR	Update Final Safety Analysis Report
VIO	Violation
WR	Work Request

ATTACHMENT 2

EMERGENCY PLAN AND IMPLEMENTING PROCEDURES REVIEWED

Document	Document Title	Revision
Plan	Section 4	14
	Section 7	19
	Appendix A	15
IAP-1	Emergency Plan Implementation Checklist	22
IAP-2	Classification of Emergency Conditions	18, 19
EAP-1.1	Offsite Notifications	38, 39, 40
EAP-2	Personnel Injury	22
EAP-3	Fire	20
EAP-4.1	Release Rate Determination	8, 9
EAP-8	Personnel Accountability	37 - 40
EAP-9	Search and Rescue Operations	9
EAP-10	Protected Area Evacuation	14
EAP-11	Site Evacuation	15
EAP-13	Damage Control	12
EAP-14.5	Operational Support Center Activation and Operation	13
EAP-15	Emergency Radiation Exposure Criteria and Control	10
EAP-17	Emergency Organization Staffing	76 - 81
EAP-19	Emergency Use of Potassium Iodide (KI)	19
EAP-20	Post Accident Sample, Offsite Shipment and Analysis	8
EAP-22	Operation and Use of Radio Paging Device	Delete
EAP-23	Emergency Access Control	10
EAP-24	EOF Vehicle and Personnel Decontamination	8
EAP-29	EOF Ventilation Isolation During an Emergency	5
EAP-37	Security of the EOF and EL During Drills, Exercises and Actual Events	5
EAP-40	EOF Radio System	Deleted
EAP-43	Emergency Facilities Long Term Staffing	37 - 40
EAP-44	Core Damage Estimation	4
EAP-45	Emergency Response Data System (ERDS) Configuration Control Program	5
SAP-1	Maintaining Emergency Preparedness	14
SAP-2	Emergency Equipment Inventory	23, 24
SAP-3	Emergency Communications Testing	55 - 59
SAP-5	Offsite Emergency Plan Inventory	Deleted
SAP-6	Drill/Exercise Conduct	13
SAP-7	Monthly Surveillance Procedure for On-Call Employees	33, 34
SAP-8	Prompt Notification System Failure/Siren System False Activation	10
SAP-10	Meteorological Monitoring System Surveillance	7
SAP-11	EOF Document Control	8
SAP-13	EOF Security and Fire Alarm Systems During Normal Operations	3
SAP-20	Emergency Plan Assignments	13, 14, 15