Pdblcz

July 16, 1997

Mr. Stephen E. Quinn
Vice President - Nuclear Power
Consolidated Edison Company of
New York, Inc.
Indian Point 2 Station
Broadway and Bleakley Avenues
Buchanan, NY 10511

SUBJECT: NRC INTEGRATED INSPECTION REPORT 50-247/97-07
AND NOTICE OF VIOLATION

Dear Mr. Quinn:

On June 30, 1997, the NRC completed an inspection at your Indian Point 2 reactor facility. In addition to the resident inspection activities, four separate region based specialist inspections were also conducted during this inspection period, the results of which are documented in the enclosed report.

Substantial progress was noted in the completion of activities related to the 1997 refueling outage (RFO) that commenced on May 1, 1997. While performing these activities, your staff identified a number of equipment issues that were appropriately addressed through your corrective action process. We are concerned, however, with the recent identification of a rubber hose found ingested in the 21 reactor recirculation pump (RRP). While historical at this point, as the ingestion is believed to have occurred between 1987 and 1989, the fact that the hose was unknowingly ingested into the pump is another example of poor practices in maintaining foreign material exclusion (FME) in safety-related equipment. NRC Inspection Report 50-247/96-08 documented the inoperability of the plant's feedwater regulating valves as a result of grit intrusion into the feedwater system that resulted from improper FME controls during maintenance work on the high pressure turbine during the 1995 RFO. These two events, together with other FME issues that arose during the current RFO, indicate the need for further improvement in this area.

Based on the results of this inspection, the NRC has determined that violations of NRC requirements occurred. These violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in the subject inspection report. The violations are of concern because they involve repeat occurrences of similar events for which the NRC has previously taken enforcement action and for which Con Edison had implemented corrective actions. The recurrence of similar events cited in the violations indicates that further management attention to these issues is warranted.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. In your response, you should document the specific actions taken, and any additional actions you plan, to prevent recurrence. The

B|42

(42)

NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response will be placed in the NRC Public Document Room (PDR). To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Pub. L. No. 96.511.

Sincerely,

Original Signed by:

John F. Rogge, Chief
Projects Branch 2
Division of Reactor Projects

Docket No. 50-247
License No. DPR-26

Enclosures:
1. Notice of Violation
2. Inspection Report No. 50-247/97-07

cc w/encls:
C. Jackson, Manager, Nuclear Safety and Licensing
B. Brandenburg, Assistant General Counsel
C. Faison, Director, Nuclear Licensing, NYPA
C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law
Director, Electric Division, Department of Public Service, State of New York
W. Stein, Secretary - NFSC
F. William Valentino, President, New York State Energy Research and Development Authority
J. Spath, Program Director, New York State Energy Research and Development Authority

Distribution w/encls:
W. Axelson, DRA
Nuclear Safety Information Center (NSIC)
PUBLIC
NRC Resident Inspector
Region I Docket Room (w/concurrences)
J. Rogge, DRP
R. Barkley, DRP
R. Junod, DRP

Distribution w/encls: **(VIA E-MAIL)**
W. Dean, OEDO (WMD)
R. Temps - Indian Point 2
A. Dromerick, NRR
J. Harold, NRR
G. Wunder, NRR
M. Campion, RI
Inspection Program Branch, NRR (IPAS)
R. Correia, NRR
F. Talbot, NRR
DOCDESK

DOCUMENT NAME: G:\BRANCH2\IP29707.INS
To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure **"E"** = Copy with attachment/enclosure **"N"** = No copy

OFFICE	RI/DRP		RI/DRP		RI/DRP	
NAME	RTemps/JR for		RBarkley/JR for		JRogge/JR	
DATE	07/16/97		07/16/97		07/16/97	

OFFICIAL RECORD COPY

ENCLOSURE 1

NOTICE OF VIOLATION

Consolidated Edison Company of New York, Inc. Docket No. 50-247
Indian Point Nuclear Generating Station Unit 2 License No. DPR-26

During an NRC inspection conducted from May 18 through June 30, 1997, the following violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 60 FR 34381; June 30, 1995, the following violations were identified:

A. Technical Specification Section 6.8.1 requires that written procedures be implemented covering activities referenced in Regulatory (Safety) Guide 1.33, November 1972. Appendix A of Regulatory Guide 1.33 recommends written procedures that govern procedure adherence. Station Administrative Order (SAO)-133, "Procedure, Technical Specification and License Adherence and Use Policy," Section 5.1.1 states that procedures shall be followed. Procedure RW-S-4.510, "Crane Operation and Rigging for Radwaste," Rev. 0, step 6.1.2 states that "Hoisting of MORE THAN ONE load at a time is PROHIBITED."

Contrary to the above, on June 20, 1997, radwaste workers on the Unit 1 fuel handling floor, attempted to hoist the Unit 1 cask pit cover while the # 21 reactor recirculation pump was already suspended by the crane.

This is a Severity Level IV violation (Supplement VII).

B. Technical Specification Section 6.8.1 requires that written procedures be implemented covering activities referenced in Regulatory (Safety) Guide 1.33, November 1972. Appendix A of Regulatory Guide 1.33 identifies typical safety-related activities that should be covered by written procedures, including procedures for the control of the auxiliary feedwater system and emergency power sources such as the emergency diesel generators. Regulatory Guide 1.33 also requires written procedures that govern procedure adherence. Station Administrative Order (SAO)-133, "Procedure, Technical Specification and License Adherence and Use Policy," Section 5.1.1, states that procedures shall be followed.

Contrary to the above:

1) On June 11, 1997, an operations supervisor closed valve CT-33, the suction valve to the #23 auxiliary boiler feedpump, absent procedure guidance, and at a time when the plant's configuration control system required the valve to be open.

2) On June 26, 1997, during the performance of PT-R84A-1, 21 EDG (emergency diesel generator) Alternate 24 Hour Load Test, an NRC review of a data sheet indicated that a temperature of 1110 °F was recorded for one

of the cylinders. The procedure states that the maximum allowed value is 1100 °F and that if exceeded, reduce the EDG load and notify the senior watch supervisor; however, the 1110 °F reading was not recognized as being above the maximum value and the required actions, therefore, were not performed.

This is a Severity Level IV violation (Supplement I).

C. Technical Specification Section 6.8.1 requires that written procedures be implemented covering activities referenced in Regulatory (Safety) Guide 1.33, November 1972. Appendix A of Regulatory Guide 1.33 identifies typical safety-related activities that should be covered by written procedures, including procedures for the control of maintenance work. SAO-150, "Foreign Material Exclusion and Control," provides requirements for foreign material exclusion from plant systems during maintenance activities. Section 4.1.7 of SAO-150 states that verification of system cleanliness at system closure by at least two qualified persons shall be documented in the work package.

Contrary to this requirement, on May 16, 1997, two qualified technicians performed a verification of system cleanliness following work on the internals of valve BFD-62-3, part of the auxiliary feedwater system. However, the verification was inadequate in that it failed to identify that a rag, introduced into the piping system during maintenance on BFD-62-3, had been left inside the system piping. As a result of flow anomalies during subsequent operation of the 23 auxiliary feedwater pump, boroscopic examination of the system identified the rag lodged in the internals of a downstream flow control valve, FCV-406D.

This is a Severity Level IV violation (Supplement I).

Pursuant to the provisions of 10 CFR 2.201, Consolidated Edison Company of New York, Inc., is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, with a copy to the Regional Administrator, Region I, and a copy to the NRC Resident Inspector, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. Where good cause is shown, consideration will be given to extending the response time.

Because your response will be placed in the NRC Public Document Room (PDR), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. However, if you find it necessary to include such information, you should clearly indicate the specific information that you desire not to be placed in the PDR, and provide the legal basis to support your request for withholding the information from the public.

Dated at King of Prussia, PA
this 16th day of July, 1997

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.	50-247
License No.	DPR-26
Report No.	97-07
Licensee:	Consolidated Edison Company of New York, Inc.
Facility:	Indian Point 2 Nuclear Power Plant
Location:	Buchanan, New York
Dates:	May 18 through June 30, 1997
Inspectors:	R. Temps, Senior Resident Inspector B. Westreich, Resident Inspector P. Habighorst, Resident Inspector R. Ragland, Radiation Specialist E. King, Security Inspector H. Gray, Senior Project Manager J. Carrasco, Engineering Inspector
Approved by:	John F. Rogge, Chief Projects Branch 2 Division of Reactor Projects

EXECUTIVE SUMMARY

Indian Point 2 Nuclear Power Plant
NRC Inspection Report No. 50-247/97-07

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a six-week period of resident inspection and inspection by region based inspectors.

Operations

A violation was identified for two instances of failing to follow procedures. The first instance (O4.1) involved the unauthorized operation of a suction valve to the #23 auxiliary boiler feedpump (ABFP) and the second instance (O4.2) involved the failure to recognize and take required actions for a temperature reading that was outside the maximum allowed value during a surveillance test on the #21 emergency diesel generator (EDG).

Maintenance

In general, maintenance activities observed by the inspectors were assessed to have been performed properly and in accordance with procedures. (M1.1) A specialist inspection was performed to assess the effectiveness of your Inservice Inspection (ISI) program with particular emphasis on the activities performed on the steam generators during the 1997 Refueling Outage (RFO). The inspector concluded that Con Edison was effectively controlling these activities, and that Westinghouse, who was contracted to perform the steam generator inspections, appeared to be using appropriate examination techniques. (M1.2)

A number of problems were identified during and after the 1995 refueling outage related to proper control of contractors. In preparation for the 1997 RFO, Con Edison initiated actions to improve performance of contractors including increased control and oversight of contractors. Based on the results of a specialist inspection conducted during the 1997 RFO, general improvement in the control and performance of contractors was noted. (M1.3)

A violation was identified for improper foreign material exclusion practices that resulted in a rag being left inside the piping for the auxiliary feedwater system. (M2.1) Also, during decontamination of the # 21 reactor recirculation pump, a rubber hose was found wrapped tightly around the pump impeller. The hose was believed to have been ingested in the 1987 to 1989 time frame. (M2.3)

Vapor containment (VC) tours were performed towards the end of the refueling outage. VC cleanliness was assessed to be good. (M2.4)

Followup inspection was performed on the root cause analysis for the failure of main steam safety relief valve (MSSRV) MS-46C, documented in NRC inspection report 50-247/97-05. The inspectors concluded that Con Edison appropriately identified the causes for the failure

of MSSRV MS-46C. Adequate corrective actions were taken on the remaining safety valves. All of the MSSRVs were successfully tested on July 5, 1997. (M8.1)

Engineering

In several instances, individual root cause teams were initiated for significant problems, such as the discovery of an ingested rubber hose in the 21 reactor recirculation pump, a damaged snubber on the 21 steam generator, and problems with DB-50 breaker operation. A number of other equipment and performance issues were also assigned root cause investigations. We observed that each investigation used recently enhanced root cause techniques for guidance in a more formal manner than in the past, and that the techniques were effectively used to more rigorously identify and validate potential root causes for the equipment problems. (E2.1)

Plant Support

Con Edison generally maintained an effective security program. Management support was evident based on the effective implementation of the security program as documented in this report. Two of three previously identified items were closed. However, an inspector follow-up item (IFI) associated with assessment aid weaknesses will remain open pending further review. Audits were thorough and in-depth, protected area detection aids were installed and maintained as described in the NRC-approved physical security plan (the Plan), and alarm station operators were knowledgeable of their duties and responsibilities. Based on inspector's observations and discussions with security management, the inspector determined that Con Edison's provisions for land vehicle control measures satisfy regulatory requirements and licensee commitments.

Section 3.1.2 of the Plan, titled "Protected Area Barrier and Isolation Zones," was reviewed. The inspector determined, based on observations, discussions with security supervision, and by reviewing applicable procedures and shift activity records, that the protected area barrier and isolation zones are being maintained and controlled as required in the Plan and applicable procedures.

In the area of health physics, we found that overall radiological controls implemented for outage work were very good. This included external and internal dose controls, techniques used to train contract technicians on health physics procedures, and efforts to communicate expectations for performance to plant personnel. Response to self-identified deficiencies was good and frequent quality assurance surveillances were performed to evaluate outage activities. Some deficiencies in housekeeping continued. One violation of NRC requirements was identified involving radwaste personnel who attempted to hoist two loads at the same time contrary to procedure requirements. Contributing causal factors were insufficient planning and insufficient supervisory oversight.

TABLE OF CONTENTS

Table of Contents (cont'd)

ATTACHMENT

Report Details

Summary of Plant Status

At the start of the inspection period, the plant was in the refueling condition for the 1997 refueling outage (97 RFO) that commenced on May 1, 1997. Major outage activities performed during the period included work on the main turbine and associated systems, completion of steam generator (SG) eddy current testing and tube plugging, reactor coolant system (RCS) draindown to mid-loop conditions for SG nozzle dam removal, subsequent evacuated fill of the RCS, and return to service of various primary and secondary systems following maintenance and testing. At the end of the period, the plant had been heated up above 200 °F, a technical specification (TS) mode change, and was holding below 350 °F for performance of various tests.

I. OPERATIONS

O1 Conduct of Operations[1]

O1.1 General Comments (71707)

Using Inspection Procedure 71707, the inspectors conducted frequent reviews of ongoing plant operations. In general, the conduct of operations was assessed to be adequate. However, several events occurred that were the result of operator inattentiveness and/or failure to follow procedures. A significant oversight involving violation of the TS curves for the overpressure protection system (OPS) is discussed in special NRC Inspection Report 50-247/97-08. The remaining issues are discussed in Sections O4.1 and O4.2 of this report.

O4 Operator Knowledge and Performance

O4.1 Mis-positioned Valve in the Auxiliary Feedwater System; VIO 50-247/97-007-01, Part 1

a. Inspection Scope (71707)

The inspectors reviewed an event in which the suction valve to the 23 auxiliary boiler feedpump (ABFP) was found in an incorrect position. The review consisted of discussions with the Operations Manager.

b. Observations and Findings

On June 11, 1997, an operator was requested to prepare the 23 ABFP to be started in preparation for using it to add water to a steam generator (SG). While checking

---

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.

the pump lineup, the operator alertly identified that the suction valve for the pump was closed, vice the expected open position. He informed his management of the discrepancy, the valve was operated to the correct position, and the pump was later run successfully.

Operations management promptly initiated an investigation into the valve mispositioning. Initial investigation focused on the clearance of a maintenance tagout on the pump which had recently been removed. In the restoration section of the tagout, valve CT-33 (the pump suction valve) had been signed for as being repositioned and left in the open position. This action was confirmed to have taken place. The question of how the valve was later found closed was resolved when an operations supervisor admitted that he had shut the valve on his own initiative, and absent any formal mechanism to do so, while conducting a separate evolution involving operation of the 21 ABFP. The individual had heard flow noises in the recirculation line for the idled 23 ABFP and had closed down on the pump suction valve in an effort to stop the recirculation. However, he did not inform the control room operators of this action, nor was it performed or tracked by an formal mechanism, and the individual subsequently forgot that the valve had been repositioned.

TS Section 6.8.1 requires that written procedures be implemented covering activities referenced in Regulatory (Safety) Guide 1.33, November 1972. Appendix A of Regulatory Guide 1.33 identifies typical safety-related activities that should be covered by written procedures, including procedures for the control of the auxiliary feedwater system. Regulatory Guide 1.33 also requires written procedures that govern procedure adherence. Station Administrative Order (SAO)-133, "Procedure, Technical Specification and License Adherence and Use Policy," Section 5.1.1, states that procedures shall be followed.

Contrary to this on June 11, 1997, the operations supervisor closed valve CT-33, the suction valve to the #23 auxiliary boiler feedpump, independent of procedure guidance, and at a time when the plant's configuration control system required the valve to be open and sealed open. Although this violation was identified by Con Edison, it is being cited because of previous NRC concerns over informality in activities by supervisory personnel affecting the configuration of plant equipment. **VIOLATION (50-247/97-007-01, Part 1)**

c. Conclusions

The inspector concluded that the operator sent to check the 23 ABFP for operation performed well in identifying that the pump suction valve was closed as the pump would likely have been damaged if operated with the suction valve closed; however, the operations supervisor's action in closing the valve was a violation of station requirements.

O4.2 Emergency Diesel Generator (EDG) Test Requirement not Implemented; VIO 50-247/97-007-01, Part 2

a. Inspection Scope (71707, 61726)

The inspectors observed performance of the 24 hour load test on the 21 EDG.

b. Observations and Findings

On June 26, 1997, during the performance of PT-R84A-1, 21 EDG Alternate 24 Hour Load Test, an NRC inspector reviewed a data sheet, obtained during the load test, that indicated that a pyrometer reading of 1110 °F was recorded for one of the EDG's cylinders. The procedure states that the maximum allowed value is 1100 °F and that if exceeded, reduce the EDG load and notify the senior watch supervisor; however, these actions were not carried out. In discussion of this event, the inspector was informed that the reading of 1110 °F was not recognized by the EDG operator as being above the maximum value and therefore the required actions had not been performed.

The temperature limit was exceeded during the portion of the test that operates the EDG at maximum load for thirty minutes. At the time that the inspector made the observation, the load on the EDG had been reduced back to a lower load for the remainder of the test and all EDG cylinder temperatures were below 1100 °F. The inspectors finding was documented in a deficiency report and engineering personnel determined that operation above the temperature limit for the short period of time did not have an adverse effect on the EDG.

c. Conclusions

Non-licensed operator performance during the conduct of this test was assessed to be inadequate in that the out of specification reading was not recognized and acted on at the time the reading was obtained. The failure to implement the surveillance test procedure requirements for temperatures exceeding 1100 °F is a violation of NRC requirements and is the second example cited in VIO 50-247/97-007-01, regarding failure to follow procedures. **VIOLATION (50-247/97-007-01, Part 2)**

II. MAINTENANCE

M1 Conduct of Maintenance

M1.1 Maintenance and Surveillance Observations

a. Inspection Scope

The inspectors observed the performance of various maintenance activities. Review of completed work packages and surveillance tests was also performed.

b. Observations and Findings

The following maintenance activities were observed or reviewed by the inspectors:

- PT-R11; sensitive leak rate testing on the weld channel pressurization system
- PT-R61; 480 volt breaker undervoltage test
- NP-95-77244; post-maintenance local leak rate test on SWN-44-5A
- Work Order # 97-91945; freeze seal for isolation of valve 1860
- PT-R84A-1; 21 EDG alternate 24 hour load test
- PT-R84B-1; 22 EDG alternate 24 hour load test

No concerns, other than those noted in Section O4.2 concerning PT-R84A-1, were identified. Comments on specific maintenance activities are as follows:

On June 16, 1997, the inspector observed Con Edison contractor personnel establish a freeze seal to isolate valve 1860 from the refueling water storage tank (RWST). Valve 1860 is a three inch manual isolation valve on the safety injection pump return line to the RWST. The inspector noted that the contractor was knowledgeable of the freeze seal activities. The individual was aware of the location of nitrogen tanks and backup supplies, monitoring of temperature and pressures for the nitrogen, criteria for establishment of the freeze plug, and expected contingency actions if the freeze plug were to fail. The inspector confirmed that material required for contingency actions were staged on the job site.

On June 25, 1997, during observations of PT-R15, "Hydrogen Recombiner Test," the inspector noted that operators appropriately stopped the testing when the main and startup isolation hydrogen isolation valves failed to modulate when a temperature control signal was processed. This failure occurred during nitrogen purge of the system. The operators appropriately briefed instrument and control technicians on the symptoms of the failure. The control signal malfunction was corrected and the equipment performed as designed.

During the hydrogen recombiner test, the inspector discussed with the system engineer the generally poor material condition of the hydrogen recombiner control panel. Items identified included broken annunciator windows, and missing bulbs on the lower explosive level meters. The system engineer confirmed that the items were identified in the problem identification system, and further informed the inspector of current plans to replace the installed hydrogen recombiner system.

c. Conclusions

In general, the maintenance activities were performed properly and in accordance with procedures.

M1.2 Inservice Inspection Program Review

a. Inspection Scope (73753)

A regional specialist performed this inspection to assess the effectiveness of the Inservice Inspection (ISI) Program with particular emphasis on the ISI of steam generators (SGs).

b. Observations and Findings

The Indian Point 2 (IP2) ISI for the 1997 RFO represented the second outage of the third ten-year ISI interval. Since Con Edison is on a 24 month cycle, they have only five scheduled outages per ten year-interval. As a result, two separate ISI plans were being performed during the 1997 RFO. Con Edison took credit for completed examinations as required by the American Society of Mechanical Engineers (ASME) Code Section XI, IWB-2412 and IWC-2412. The inspector verified Con Edison's ISI program scope that groups the ASME Section XI components in physical areas. Con Edison explained that this grouping approach allows them to be more efficient in the use of scaffolding and manpower allocation. In addition, the grouping areas approach helps to reduce radiation exposure to workers.

Con Edison's ISI outage plan included welds on the following components: the reactor head, # 21 SG circumferential welds and secondary side nozzle welds, pressurizer and pressurizer relief nozzles, residual heat removal (RHR) and the regenerative heat exchangers, and various Class 1 and 2 piping welds and pipe supports.

Effectiveness of Licensee Controls over Inservice Inspection (Nondestructive Examination) Activities

The inspector verified that Con Edison has adequate control over the Inservice Inspection nondestructive examination (NDE) activities of the present outage. Con Edison determined the scope of work performed during this outage by the contractor(s) based on the ISI program. The inspector noted that Con Edison reviewed and approved the NDE procedures against check lists developed from the ASME Code in effect for the current inspection interval.

Steam Generator Eddy Current (EC) Procedure

The inspector found the steam generator eddy current analysis procedure to be acceptable, approved by the EC vendor and licensee personnel, and in accordance with ASME Code and TS requirements. This procedure provided clear guidance to primary and secondary analysts on requirements for identification and recording of indications. The procedure also delineated clear criteria for the type of indications that require further inspection in order to be appropriately dispositioned. Examination data and documentation were also in accordance with the EC analysis

procedure and ASME Code. Con Edison EC level III closely followed the activities of the contractor performing the steam generator ISI.

Tube Examination Program Implementation

Con Edison's tube examination program was prepared in accordance with the Electric Power Research Institute (EPRI) steam generator tube inspection guidelines. As a result of early eddy current inspection findings, an expansion was made to inspect all support plate intersections with the Cecco-5 probe and the full lengths of all the unplugged tubes with the bobbin coil probe.

EC data acquisition personnel followed appropriate procedures, controlled critical parameters, and performed calibration checks as required. The scope of the EC inspections with the bobbin coil, Cecco-5, and Plus-Point coil probes exceeded TS requirements. A Cecco-5 EC probe was used for screening indications of the tubing support plate intersections and 20 inches above followed by a characterization using Plus Point probes. The bobbin coil portion of the Cecco-5 probe is being used to examine the straight portions of the tube at elevations higher than 20 inches above the tube sheet. The tube sheet area and the lower 20 inches are being examined with the Cecco probe.

EC analyst (primary, secondary and resolution) appeared to be performing analysis in accordance with the EC analysis procedure. Con Edison had an independent EC level III contractor reviewing EC data to ensure the proper identification and recording of indications.

Qualifications of Eddy Current Examination Personnel

The inspector reviewed records of the qualifications and certifications of the Westinghouse personnel involved in the performance of the steam generator tubing eddy current data acquisition and analysis activities. Based on this review, and interviews with eddy current personnel, the inspector determined that these individuals met the qualification and certification requirements stated in the pertinent supplement of SNT-TC-1A and ASME Code Section XI.

c. Conclusion

Con Edison appeared to have an effective means to control the NDE activities by determining the NDE scope of activities, and by reviewing and approving NDE procedures submitted by the contractor performing the NDE activities. The inspector found the steam generator eddy current analysis procedure to be acceptable and in accordance with ASME Code and TS requirements.

The inspector found the steam generator tube inspection program procedures and implementation acceptable. The personnel managing and implementing the program were knowledgeable and followed procedures. Con Edison appropriately expanded inspections based on inspection findings.

Based on the review of Con Edison's specification, qualification and certification records, interviews with EC personnel and direct observation of the EC activities in progress, the inspector concluded that Con Edison maintained good oversight of the qualification and certification of EC personnel.

Overall, Con Edison effectively monitored and controlled the ISI Program, in particular the ISI of the steam generators.

M1.3 Control of Contractors (40500, 62707 and 71707)

a. Inspection Scope

A specialist inspector performed a review of contractor work controls to obtain an understanding of the effectiveness of Con Edison in defining the scope of contracted work, obtaining capable contractors, monitoring the contractor work force during the performance of work, and documenting the work performed including the basis of its acceptability.

Specific areas inspected included contracted work tasks for the reactor coolant pump maintenance, instrumentation and control maintenance and calibration, in-core thermocouples, internal weld overlay of crossunder piping, wet steam piping replacement as corrective and preventive action to address flow accelerated corrosion, motor operated valve corrective and preventive maintenance, as well as other valve maintenance by a second contractor; heat exchanger opening, cleaning, tube eddy current testing and closeup; qualification and training screening of nondestructive testing technicians, field engineering staff augmentation, systems test review, and surveillances performed by the site Quality Assurance group of outage related work including that performed by contractors. The review of contractor control included attention to the use of workers from other parts of the Con Edison system to do work during the refueling outage.

Steps in the contracting process including specification of the work scope, the contractor selection process, the post selection contractor meeting to review the work scope and work conditions, evaluation of contractor employee qualifications, and the task work packages were examined. Discussions of the contracted work were held with the responsible supervisory individuals and observations of work in progress and completed were made by the inspector.

b. Observations and Findings

For the areas inspected, the work scope was noted to be well defined and the contractor was provided with specifics of the work and work practices prior to the start of the work. Emphasis was given to personnel safety, foreign material accountability and exclusion, and environmental concerns in the contracting process and during the performance of work. An individual responsible for the work scope definition and proper execution of work as the task Con Edison contact was assigned. Work packages were prepared for each work task. The work packages

were found to be comprehensive and appropriate for the work scope. For the most part, work packages were current with the work as completed, although some minor problems with documentation were noted. Quality Assurance (QA) had also identified work packages deficiencies during several QA surveillances and steps were in process to correct and minimize their occurrence. The work package problems were generally in documentation details rather than in proper work task definition or work performance.

c. Conclusions

Inspection of the performance and control of contractors, including personnel sent to the site to perform work during the refuel outage from others parts of the Con Edison system, found that the contractor work scope was well defined and that Con Edison staff was actively engaged in contractor oversight.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Poor Foreign Material Exclusion (FME) Controls During Maintenance on an Auxiliary Feedwater System Valve; VIO 50-247/97-007-02

a. Inspection Scope (61726, 62707)

The inspectors reviewed the details of an incident in which a rag was left inside a section of piping associated with the # 23 auxiliary boiler feedpump (ABFP) during valve maintenance. The inspectors discussed the event with maintenance personnel and with the individuals who performed a root cause investigation into the event.

b. Observations and Findings

On June 9, 1997, operators started the 23 ABFP in order to place water in the 24 SG. The operators subsequently observed level in the SG was not increasing and they secured the pump to investigate the situation. The system lineup was checked and found to be satisfactory. Upon boroscopic inspection of a section of the flow piping downstream of the 23 ABFP, a rag was found to be clogging the internals of flow control valve FCV-406D which controls flow to the 24 SG. The rag was removed, other portions of the system were verified to be free of foreign material, and the system was returned to available status.

Con Edison initiated a root cause investigation to determine how the rag was introduced into the system. The inspectors discussed the results of the root cause investigation with the two individuals who performed it. Two root cause techniques were used: barrier analysis and an event/causal factors chart. The inspectors assessed that the root cause investigation was quite rigorous and identified a number of issues that contributed to this event. The results of the investigation will be factored into the final SAO-132A report required by the problem identification and corrective action program. The root cause investigation identified a number of

areas for consideration in recommending improvements to the foreign material exclusion program.

The inspector was informed that on May 15 and 16, 1997, contractor personnel were assigned to perform maintenance on valve BFD-62-3. This is a two inch gate valve located just upstream of flow control valve FCV-406D. During the work activity, the contractor performed "blue" checks of the valve internals. The blue check requires dry valve internals. Because of a small inflow of water to the valve internals, the contractor had placed two small rags in the piping to absorb the inleakage and allow the blue checks to be performed. During restoration from the job the contractor thought all of the rags were removed, although no formal mechanism had been used to track the insertion or removal of the rags.

By procedure, visual checks of the pipe internals by several individuals were performed prior to closure of the system following completion of the work. This inspection, while performed, did not result in the identification of the rag that was still in the piping. The root cause team identified several factors that contributed to the failure to identify this fact including inadequate tools for the inspection and no mention by the contractors that rags had been placed in the system to control inleakage.

Technical Specification Section 6.8.1 requires that written procedures be implemented covering activities referenced in Regulatory (Safety) Guide 1.33, November 1972. Appendix A of Regulatory Guide 1.33 identifies typical safety-related activities that should be covered by written procedures, including procedures for the control of maintenance work. SAO-150, "Foreign Material Exclusion and Control," provides requirements for foreign material exclusion from plant systems during maintenance activities. Section 4.1.7 of SAO-150 states that verification of system cleanliness at system closure by at least two qualified persons shall be documented in the work package.

Contrary to this requirement, on May 16, 1997, two qualified technicians performed a verification of system cleanliness following work on the internals of valve BFD-62-3, part of the auxiliary feedwater system. However, the verification was inadequate in that it failed to identify that a rag, introduced into the piping system during maintenance on BFD-62-3, had been left inside the system piping. As a result of flow anomalies during subsequent operation of the 23 auxiliary feedwater pump, boroscopic examination of the system identified the rag lodged in the internals of a downstream flow control valve, FCV-406D. **VIOLATION (50-247/97-007-02)**

Although this violation was identified by Con Edison, the loss of FME was the result of informal work practices and an inadequate post-maintenance inspection of the work area prior to system closure. Also, the NRC has had concerns with Con Edison's control of FME in safety-related systems, and this event indicates that further improvements to the existing FME controls are warranted.

c. Conclusions

The inspectors concluded that Con Edison performed an effective root cause investigation of this event; however, the introduction of the rag into the auxiliary feedwater system was the result of informal work practices, lack of specific procedure control, and an inadequate close-out inspection of the system following maintenance.

M2.2 Unexpected Identification of Starwheels Made of Texin in W-2 Switches

a. Inspection Scope (61726, 62707)

The inspectors reviewed Con Edison's response to the unexpected identification of starwheels, used in W-2 switches, that were made of Texin. Inspection consisted of interviews with the Instrumentation and Controls (I&C) Manager, engineering and licensing personnel, and review of associated paperwork.

b. Observations and Findings

During the performance of a refueling outage test, licensed operators noted that two of the hand switches associated the eight switch recirculation swapover array in the control room did not "feel right." The observation was noted in the test comments section and work orders, NP-97-91852 and 91853, were subsequently issued to investigate the two switches. When I&C personnel inspected the switches, they noted that the internal starwheel of each switch had crumbled and appeared to be made of a urethane material called Texin. The I&C personnel were familiar with this material from a previous incident involving W-2 switches in early 1996. (Reference NRC IR 50-247/96-02, Section 3.1).

In 1974, Westinghouse issued a technical bulletin, NSD-TB-74-10, that discussed W-2 switch starwheel failures. Section 5.0 of that document specifically identified affected switches as,"only W-2 switches manufactured before January 1970, having less than four stages and having more than one maintained position." The switches used in the recirculation swapover array contain four stages, and by the Westinghouse bulletin, should not have contained Texin starwheels. The problem with Texin made starwheels was that they were found to be susceptible to crumbling or cracking failure and potential inoperability of associated switches, as was the case in 1996 as discussed in NRC IR 50-247/96-02.

Con Edison sent the crumbled starwheel material off-site for chemical analysis that confirmed that it was a urethane material consistent with previous analysis of Texin by the same testing facility in 1996. Once the starwheels were identified as being made of Texin, Con Edison placed a notification on the nuclear network to alert other plants to this issue, informed Westinghouse of the test results, and Nuclear Safety and Licensing (NS&L) initiated Con Edison's process for Part 21 reportability.

Con Edison also reviewed their use of W-2 switches that were originally excluded by the Westinghouse bulletin, both by paperwork review and by in-field walkdown and verification of switches. Only two other switches, also associated with the

recirculation swapover array, were identified as having Texin starwheels. All four switches had their starwheels replaced with nylon material starwheels.

c. Conclusions

The inspectors assessed that the operators performed well in identifying that two of the switches on the recirculation swapover array did not feel right when operated. As a result of their observation, work orders were generated that subsequently led to the identification of Texin starwheels in locations that they were not expected to be in per the 1974 Westinghouse bulletin. Con Edison's followup and corrective actions were proper and timely. No further concerns were identified as a result of the inspectors' review.

M2.3 Loss of FME on the # 21 Reactor Recirculation Pump (RRP); URI 50-247/97-007-03

a. Inspection Scope

The inspector reviewed issues related to the testing of the # 21 RRP during the current refueling outage and the subsequent identification of a rubber hose found ingested in the pump internals. The inspectors also reviewed past performance history of the pump and held discussions with engineering personnel.

b. Findings and Observations

On May 3, 1997, surveillance test PT-R16, Recirculation Pumps, was performed on the #21 RRP. The pump failed the surveillance test because the minimum required differential head of 475 feet (ft) was not obtained; the pump differential head during the test was 470.25 ft. Following identification of the failure, and anticipating that the pump might have to be replaced during the current outage, the #21 RRP was replaced with a refurbished spare RRP. During decontamination and inspection of the removed pump, a portion of red rubber hose about twenty feet long was found ingested in the pump's impeller. Following identification, Con Edison initiated a root-cause investigation team to review this issue.

At the end of the report period, the inspectors' and Con Edison's root-cause investigations were ongoing. Preliminarily, it appears that the hose was ingested into the impeller in the 1987 to 1989 time frame based on an apparent sharp drop in pump performance that occurred. Engineering resolution to the degraded pump performance as well as the result of Con Edison's root-cause evaluation and review of past pump operability with the ingested hose is discussed further in NRC Special Inspection report 50-247/97-08. This issue remains unresolved. **URI (50-247/97-007-03)**

c. Conclusions

The NRC is concerned with the fact that a rubber hose was ingested into the # 21 RRP. While historical at this point, the fact that the hose was unknowingly ingested into the pump is another example of poor practices in maintaining foreign material exclusion (FME) in safety-related equipment and in assessing equipment performance degradation. NRC Inspection Report 50-247/96-08 documented the

inoperability of the feedwater regulating valves as a result of grit intrusion into the feedwater system that resulted from improper FME controls during maintenance work on the high pressure turbine during the 1995 RFO. These two events, together with other FME issues that arose during the current RFO, such as the loss of FME discussed in Section M2.1, indicate the need for further improvement in this area.

M2.4 Post-outage Containment Tours

a. Inspection Scope (71707)

The inspectors performed detailed inspections of the vapor containment (VC) at the end of the inspection period following completion of major outage activities in the VC. The tours, made on June 24 and 30, 1997, focused on verifying general cleanliness of the VC and removal of outage equipment as well as inspection of the general condition of plant systems in the VC to support plant operation.

b. Observations and Findings

The inspectors observed that the general condition of the VC was good. Most outage equipment had been removed with remaining items being tracked for removal prior to reactor startup. Specific inspection of the safety-related sump areas was performed and the sumps verified to be clean and free of debris. Leakage collection paths under open grating were also verified to be clean. A number of small items, such as pieces of tape, were identified by the inspectors and were removed by Con Edison personnel accompanying the inspectors on the tours. Some leaking valves and boron precipitation on components were identified, and work orders were processed to address the conditions.

c. Conclusion

Overall, the inspectors concluded that the VC cleanliness was good and plant equipment was in a condition to support plant operation.

M8 Miscellaneous Maintenance Issues

M8.1 Followup to Main Steam Safety Relief Valve (MSSRV) Failure of May 1, 1997

a. Inspection Scope

The inspection scope evaluated Con Edison's causal analysis and corrective actions in response to a main steam safety relief valve failure on May 1, 1997. Past NRC assessments of operator and surveillance test performance during this event are documented in inspection report 50-247/97-05.

b. Observations and Findings

On May 1, 1997, Con Edison was performing performance test PT-R6, Main Steam Safety Valve Setpoint Determination. Main steam safety relief valve, MS-46C, associated with the #23 steam generator, stuck open for approximately five minutes resulting in a safety injection actuation.

On May 29, 1997, after failure of safety valve MS-46C, the NRC approved a relief request from American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Section XI to obtain "as found" set pressure and seat tightness data on the untested main steam safety valves. Verbal approval had been granted at an earlier date. The NRC's understanding during approval of ASME Section XI relief request was that Con Edison was to determine the root cause for the valve failure, perform associated corrective actions, determine applicability of corrective actions for the remaining main steam safety valves, and test the valves before restart from the 1997 refueling outage.

On June 23, 1997, Con Edison concluded their investigation into the causes for the failure of valve MS-46C. The causes identified were internal valve clearances not meeting the vendor specification, and the build-up of a corrosion layer on the outside diameter of the disc holder. Three clearances not meeting the vendor specifications were the diameter of the disc holder, spindle/bearing, and the spindle being out of straightness. All of the clearances were less than the vendor specification. Con Edison believed that this resulted in an apparent increase in friction forces precluding the valve from closing until steam generator pressure decreased to a point to overcome the friction forces.

The completeness of the causal analysis by Con Edison personnel was adequate. The analysis considered other failure modes such as seat corrosion, foreign material, low safety valve setpoint, testing equipment malfunction, and valve blowdown settings.

A corrective action implemented prior to "as-left" testing on the main steam safety valves included a maintenance procedural revision to verify internal valve clearances including those out of specification on valve MS-46C. The revised procedure was used to overhaul the remaining safety valves during the refueling outage. The corrosion on the outside disc holder was also identified on valve MS-45A. The composition of the corrosion is scheduled for chemical analysis in July 1997.

c. Conclusions

Con Edison appropriately identified the causes for the failure of MSSRV MS-46C. Adequate corrective actions were taken on the remaining safety valves. The inspectors note that all of the MSSRVs were successfully tested on July 5, 1997.

III. ENGINEERING

E2 Engineering Support of Facilities and Equipment

E2.1 Root Cause Teams Review

a. Inspection Scope

The inspectors reviewed recent changes made to SAO-132, Analysis of Station Events and Conditions, that were made to improve Con Edison's problem identification corrective action process. This is an area that NRC has had concerns with and for which enforcement action was recently taken. The inspector reviewed the changes to SAO-132, and held discussions with site personnel regarding training in root cause methodologies and their use in several ongoing root cause team evaluations for equipment issues, some identified during the 1997 RFO and others predating the RFO.

b. Findings and Observations

SAO-132 is the procedure that Con Edison uses for root cause analysis of station events and conditions. Each morning, the daily management and review group (DMRG), an interdisciplinary group of department and section managers, discusses various initiating events, such as those documented in Open Item Report (OIRs) or Significant Occurrence Reports (SORs). The DMRG then assigns a priority to each event; priority 1, 2 or 3, with 1 being the most significant. Priority 1 and 2 events are assigned an investigator, or investigators as necessary, with associated due dates for their reports. All Priority 1 events require issuance of an associated SAO-132 A report and are usually investigated by use of a root cause team investigation. SAO-132 A reports also require review and approval by the Station Nuclear Safety Committee (SNSC). Priority 2 events require SAO-132 B report and generally assigned to an individual for root cause analysis. A SNSC review may or may not be required. Lastly, Priority 3 events are assigned codes for trending purposes.

Changes to the SAO-132 process were reviewed. These changes have been described extensively by Con Edison in their response to the SALP Report (IR 50-247/97-99) dated June 9, 1997, and in their response to a Level III violation, involving inadequate corrective actions, dated June 26, 1997. The major changes included: 1) the use of formal root cause analysis methods, 2) the use of multi-disciplinary teams for significant items, 3) the establishment of formal post-event critiques for significant items, 4) the establishment of peer reviews for SAO-132 A reports, 5) training for investigators and others involved in root cause investigation analytical techniques including the Management Oversight and Risk Tree (MORT) system, and 6) periodic review of assigned events by the DMRG.

The inspectors verified that SAO-132 was revised to incorporate the major changes. The inspectors also verified that training classes have been given on the MORT system as well as other root cause techniques, and that future training is planned for station personnel.

The inspectors also observed the implementation of these changes in a number of recent root cause investigations. At the time of the inspectors review, Con Edison had fourteen separate root cause investigative teams ongoing. The inspectors held discussions with a number of the team leaders and verified that each team had a clear charter guiding their investigations, and that the new root cause methodologies were being used. The investigative teams were dealing with a variety of issues, some historical, others the result of problems identified during the current RFO. Some of the problems being investigated included source range instrument spiking, a snubber issue for the steam generators, DB-50 breaker issues, auxiliary feedwater system valve performance history, and emergency diesel generator jacket water pressure switch failures.

c. Conclusions

The inspectors observed that root cause investigative teams were performing their root cause investigations in a significantly more formal manner than in the past, and that the new investigative techniques were effectively used to more rigorously identify and validate potential root causes for equipment problems. The inspectors will continue to monitor and assess Con Edison's use of the revised root cause investigative process before assessing their long term efficacy in improving both plant and personnel performance at the site.

E8 Miscellaneous Engineering Issues

E8.1 UFSAR Review

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 inspection discussed in this report, the inspectors reviewed the applicable portions of the UFSAR that related to the areas inspected. An FSAR discrepancy was identified by the inspectors relative to the hydrogen recombiners (HRs). The FSAR states the exhaust vents from the HRs are directed upwards. On a tour of the vapor containment, the inspectors noted that the nozzles were pointed horizontally. An OIR was initiated and a safety evaluation performed to verify that the existing configuration was satisfactory. Con Edison will also update the FSAR, although the update could be moot because of their pending request for approval to use passive autocatalytic hydrogen recombiners that would allow the present system to be retired.

IV. PLANT SUPPORT

R1 Radiological Protection and Chemistry Controls

Reviews were performed of occupational radiation exposure. Specific areas reviewed included external dose controls; radioactive material and contamination controls; status of facilities and equipment; staff training; quality assurance surveillances; and a review of facility conditions versus the requirements in the UFSAR. The inspector also observed rigging practices, and evaluated licensee response to previous violations.

R1.1 External Dose Controls

a. Inspection Scope (83750)

The inspector reviewed external dose controls including radiological boundaries, high radiation area controls, as-low-as-is reasonably-achievable (ALARA) monitoring, and post chemical decontamination recontamination rates. Information was gathered through tours of the vapor containment, primary auxiliary building, chemical systems building, and turbine building; through reviews of radiological survey data; and through discussions with cognizant personnel.

b. Observations and Findings

Radiological boundaries were well defined, easily observable, and based on a review of survey data, accurately posted. Entrances to areas controlled as high radiation areas were appropriately barricaded and posted, and doors to areas controlled as locked high radiation areas were securely locked. High radiation area doors/gates were equipped with local, and in some cases remote, alarms to alert personnel when doors/gates to high radiation areas were opened. These alarms were determined to be effective as evidenced by personnel taking deliberate actions to close doors/gates in order to silence alarms.

A dose goal of 225 person-rem had been established for the outage to help maintain radiation exposure as-low-as-is reasonably-achievable (ALARA). This included 45 person-rem for refueling activities; 28 person-rem for steam generator work; 12 person-rem for reactor coolant pump maintenance; 5 person-rem for modifications; 5 person-rem for in-service inspections; 5 person-rem for motor operator valve work; and 90 person-rem for outage support. Specific dose goals, including financial incentives, were negotiated and established for the major outage contractor that supported refueling activities, steam generator, and reactor coolant pump work. Performance versus established goals were closely tracked by the ALARA organization, and total outage dose was published in a daily "Outage Update" that received wide distribution. Based on discussions with a member of the ALARA organization and several health physics technicians, the inspector

concluded that the ALARA organization provided sufficient support and timely reviews for ongoing work.

During tours, the inspector randomly selected personnel within the plant and tested their knowledge of radiological conditions in their work areas. Personnel were able to identify work area dose rates, and major radiation sources within their work area.

The inspector also reviewed data generated to evaluate the effectiveness of the full system chemical decontamination performed in March of 1995 including pre and post-chemical decontamination and current radiological survey data, and data included in a draft document entitled "Full System Decon Recontamination Rate Monitoring Program." The survey data suggested that reactor coolant piping recontamination rates were relatively low, and general area dose rates near reactor coolant piping remained significantly less than pre-decon dose rates.

c. Conclusion

Based on this review, the inspector concluded that external dose controls including radiological boundaries, high radiation area controls, and ALARA oversight were very good.

R1.2 Contamination and Radioactive Material Controls; NCV 50-247/97-007-04

a. Inspection Scope (83750)

The inspector reviewed contamination and radioactive material controls including use of continuous air monitors (CAMs), personnel contaminations, and a radiological occurrence report that evaluated the discovery of radioactive material placed in a clean trash dumpster. Information was gathered through plant tours, review of personnel contamination reports, and through discussions with cognizant personnel.

b. Observations and Findings

During plant tours the inspector noted extensive use of continuous airborne radioactivity monitoring equipment and that CAMs were strategically placed to provide an early indication if airborne radioactivity levels increased.

Sufficient contamination monitoring equipment was observed in use at the primary auxiliary building control point, the vapor containment control point, and conventional side (turbine building) control point to monitor personnel and equipment. Plant personnel were observed using excellent contamination control techniques at egress points from contamination areas. However, the inspector observed that multiple personnel received alarms on personnel contamination monitors at the major radiologically controlled area control known as HP1. Upon review of the personnel contamination log, trends were noted in personnel contaminations associated with scaffolding and steam generator work. The health physics manager acknowledged the observation, and stated that corrective actions

had been initiated to address trends in personal contaminations including the installation of additional high efficiency particulate air (HEPA) filtration units for work on the steam generator platform; performance of additional HP training on the use of HEPA ventilation units; posting of signs to remind personnel not to touch their eyeglasses with potentially contaminated gloves; placing emphasis on contamination controls during worker briefings; and notifying personnel to change protective clothing that becomes wet with perspiration.

Radioactive Material Found in a Clean Dumpster

The inspector reviewed the details associated with radiological occurrence report (ROR) 97-11, entitled "Radioactive Material Found in Dumpster." On May 19, 1997, a health physics technician performed a clean trash dumpster release survey and identified a small spot on the dumpster that had slightly elevated dose rates (approximately 15 microRoentgen per hour above background). The dumpster was immediately roped off and controlled as radioactive material, and the Chemistry department performed an isotopic analysis using portable spectroscopy equipment, and identified Cesium 137 and Cesium 134. On May 21, 1997, a beige bag was retrieved from the dumpster and a bag labeled as radioactive material was found inside the beige bag. The bag contained wet rags, a mop head, a face shield, and gasket materials. One of the pieces of gasket material had a radioactive material label attached to it. A preliminary investigation revealed that the gasket materials most likely originated from the front and side access cover plates of the inner cylinder of the low pressure turbine. A preliminary investigation determined that the radioactive materials had been inappropriately disposed of in a beige bag during cleanup activities that occurred on May 17, 1997. The failure to properly label the radioactive material was determined to be a violation of procedure HP-SQ-3.002, Rev. 10, "Equipment and Material Release Requirements." Licensee corrective actions taken to address this self-identified incident included: the radioactive material was retrieved from the dumpster and brought into the restricted area; health physics management conducted documented safety talks with personnel assigned to turbine building cleaning with emphasis on radioactive material identification and handling; health physics personnel assigned to major control points were instructed on proper techniques for clean trash release; copies of clean trash release procedures were distributed to control points; a plant notification was published in the May 22, 1997, Outage Update newsletter reminded workers to contact health physics prior to moving radioactive materials; and a formal critique was initiated. This licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the "NRC Enforcement Policy." **NCV (50-247/97-007-04)**

c. Conclusions

The inspectors concluded that contamination controls were good, and the health physics staff responded appropriately to identified trends in personnel contaminations. Con Edison's response to radioactive material found in a dumpster outside of the restricted area was very good.

R2 Status of Facilities and Equipment

a. Inspection Scope (83750)

The inspector performed a review of housekeeping and material conditions. Information was gathered through plant tours and discussions with cognizant personnel.

b. Observations and Findings

The inspector noted improvements in the material condition of the pipe penetration area including improved lighting and the application of new floor surfaces. However, housekeeping deficiencies were identified in a number of other areas including the service water (SW) pipe chase, resin transfer room, and various areas in the primary auxiliary building. Deficiencies included miscellaneous trash and debris in the SW pipe chase; and scaffolding materials, miscellaneous tools, and debris laying on the floor in the primary auxiliary building. The health physics manager acknowledged the deficiencies and stated that efforts were underway to improve overall housekeeping.

c. Conclusions

Based on this review the inspectors concluded that material conditions in the pipe penetration area had improved. However, outage related housekeeping deficiencies were identified in the SW pipe chase area and various locations within the primary auxiliary building.

R5 Staff Training and Performance in Radiological Protection and Chemistry (RP&C)

a. Inspection Scope (83750)

The inspector reviewed methods used to communicate expectations for performance to general plant workers and newly employed techniques used for training contract technicians on health physics procedures. Information was gathered by reviews of daily published "outage updates," outage information handouts, tours through the plant, and discussions with cognizant personnel.

b. Observations and Findings

The inspector noted that concerted efforts were taken to communicate expectations for performance to general plant workers. This was evidenced by publication of daily "outage updates," distribution of "safety-handouts," and posting of large banners with radiation worker "reminders."

Procedure Training

The radiation protection manager and a technical training instructor stated that contractor health physics technicians had been trained on health physics procedures using new training techniques. In the past, procedure training was conducted by requiring technicians to read procedures, an instructor would provide highlights, and the individuals would be tested on the procedures. The new training technique was called "mind mapping," and each technician was assigned several procedures and asked to make a graphical picture or presentation that embodied the procedural concepts. The students were asked to be inventive and were given creative freedom to develop whatever graphical picture (mind map) they felt was appropriate. The technicians were then asked to present their mind maps (pictures) to the rest of the class. The inspector noted that contract health physics technicians selected for interviews, stated that student participation was very good, and individuals trained using mind maps had better retention and understanding of procedural guidance than when previous training techniques were used.

c. Conclusions

Based on this review, the inspector concluded that health physics staff effectively communicated expectations for performance to plant workers. Newly employed procedure training techniques referred to as "mind mapping" were effective.

R7 Quality Assurance in RP&C Activities

a. Inspection Scope (83750)

The inspector reviewed quality assurance surveillances and open item reports initiated by the health physics staff. Information was gathered by reviews of quality assurance surveillances, open item reports, and through discussions with cognizant personnel.

b. Observations and Findings

The inspector reviewed 19 quality assurance surveillances performed between May 1 and May 17, 1997. Surveillance findings were generally good, and used to identify areas of weakness for audit focus. Significant issues were placed in problem identification/resolution programs, and minor issues were offered to the responsible organization for corrective actions.

The inspector reviewed six radiological control related issues that were recorded in the open item report system between the period of March 8 through May 17, 1997. Examples included: increased airborne radioactivity levels occurred in the pipe penetration area when an air compressor was started in the transformer yard; loose contamination was found on a ventilation plenum in an unposted area; and inconsistencies were identified in equipment calibration procedures. These issues were initiated by health physics technicians, were insightful, and were noted as good findings by the inspector.

c. Conclusions

Based on this review, the inspector concluded that frequent surveillances were performed to evaluate health physics activities during the refueling outage. Issues entered into the open item reporting (OIR) system by health physics technicians were insightful and noted as good findings.

R8 Miscellaneous RP&C Issues

R8.1 Improper Rigging Practices; VIO 50-247/97-007-05

a. Inspection Scope (83750)

On June 20, 1997, the inspector observed radwaste personnel attempting to transfer a reactor recirculation pump to the Unit 1 fuel handling floor cask wash pit. The inspector observed rigging practices that were used, reviewed procedural guidance, and interviewed cognizant personnel.

b. Observations and Findings

During the transfer of the 21 reactor recirculation pump (RRP), the rigging crew encountered a high radiation area boundary that blocked the transfer path, and the cask pit cover was not removed prior to moving the reactor coolant pump with the crane. The inspector determined that the rigging crew failed to properly pre-plan the transfer of the RRP to the cask pit. The fuel handling floor crane was used to rig and transfer the pump across the Unit 1 fuel handling floor. During the pump transfer, health physics assistance was requested to move the high radiation area boundary that blocked the transfer path, and attempts were made to remove the cask pit cover, with a separate hoist that was attached to the crane assembly, while the pump was suspended above the cask pit. The pump transfer was not performed smoothly, and the transfer was not accomplished because the cask pit cover could not be removed with the pump attached to/or suspended by the crane. The inspector noted that if sufficient preplanning had been performed by the rigging crew, the high radiation boundary could have been modified/moved and the cask pit cover could have been removed prior to lifting the pump and attempting the pump transfer.

The inspector reviewed procedure RW-S-4.510, "Crane Operation and Rigging for Radwaste," Rev. 0, and noted that step 6.1.2 stated that "Hoisting of MORE THAN ONE load at a time is PROHIBITED." Having two loads suspended from the crane contrary to the procedure requirements is a violation of NRC requirements for procedure adherence. **VIO (50-247/97-007-05)**

The inspector discussed the procedure violation with the radwaste supervisor, radwaste manager, and radiation protection manager. These individuals acknowledged the deficiency and stated that the following corrective actions had been taken: an investigative "walk-through" session was conducted, with a qualified

Con Edison master rigger, to identify deficient work practices; the rigging qualifications of the individuals that were involved in the event were suspended; and the issue was placed into the Fire Safety Security Inspection Report (FSSIR) system for final resolution. The radwaste supervisor added that due to this event, radwaste management was considering formally limiting the qualifications of radwaste riggers to the following items: sealand boxes, onsite storage containers (OSSCs), high integrity containers (HICs), and floor plugs.

The inspector noted that immediate corrective actions were good. However, the inspector inquired as to why the issue was placed into the FSSIR system rather than the open item reporting (OIR) system, and asked whether issues placed into the FSSIR system received as broad of a review as the OIR system. The department manager-site protection stated that the FSSIR was the appropriate problem identification/resolution system since the FSSIR system was used for industrial safety issues. In addition, if the issue was deemed significant, it would be brought before the daily management review group (DMRG) where it would receive a broad review. The inspector noted that issues placed into the OIR system were routinely brought before the DMRG, and FSSIR issues were only brought before the DMRG if the issue was determined to be significant.

c. Conclusions

Based on this review, the inspector made the following conclusions.

- The attempt to hoist more than one load at a time, i.e., the Unit 1 cask wash pit cover while the RRP was already suspended, was a procedure and NRC violation. Contributing causes were insufficient planning and supervisory oversight.

- The issue involving deficient rigging practices was placed into a problem identification/resolution system that received only a limited initial review (i.e., FSSIR issues are not reviewed by senior managers in DMRG unless determined to be significant by the Department Manager - Site Protection).

R8.2 Radiogas Affecting Restricted Area Contamination Monitors; IFI 50-247/97-007-06

a. Inspection Scope 83750

The inspector reviewed actions taken to address an issue documented in Radiological Occurrence Report (ROR) No. 97-06. Information was gathered by a review of ROR 97-06, plant walkdowns, and discussions with cognizant individuals including several system engineers.

b. Observations and Findings

ROR 97-06 was written to address inadequate ventilation that resulted in radiogas affecting personnel contamination monitors located at the radiologically controlled

area exit point known as HP1. The waste collection tank (WCT) rooms have the potential for having elevated radiogas concentrations because they receive waste water from the chemical volume and control system (CVCS) tanks; the WCTs are vented to atmosphere; and the Chemical Systems Building (CSB) exhaust fan system that was designed to draw suction from the WCT rooms is out of service. If fresh CVCS water is transferred to the WCTs, the potential exists for elevated radiogas concentrations to buildup in the WCT rooms and migrate out into hallways and affect the operation of personnel contamination monitors located at HP1. This occurred on April 28, 1997, and actions were taken to post affected areas as airborne radioactivity areas, and to obtain assistance from operations and system engineering to redirect air flow.

An evaluation was performed by radiological engineering, and it was determined that an effective short term corrective action would be to open and post the 53' elevation containment annulus door, and to maintain the door between the nuclear service building (NSB) and the CSB open. In this configuration, airflow was maximized from the NSB and WCT area through the containment annulus door where the air would be captured, monitored, and exhausted through the containment and annulus exhaust system.

The Unit 1 system engineer stated that an effective long term corrective action could be accomplished by installing a modification that would install vent piping on the WCTs that would direct gases directly to the containment and annulus exhaust. The system engineer stated that a request for engineering services (RES) had been initiated to perform this modification. The inspector noted that installation of this modification would be an effective long term corrective action to address radiogas originating from the WCTs. The inspector will review long term corrective actions taken to address radiogas migration from the waste collection tanks in a future inspection. **IFI (50-247/97-007-06)**

c. Conclusion

Based on this review, the inspector determined that the short-term corrective actions to address radiogas migration from the waste collection tanks were considered effective.

R8.3 Closed: URI 50-247/96-001-03; Inconsistencies between the UFSAR shielding design basis radiation zones

The inspector reviewed a proposed change to the UFSAR that essentially eliminated the use of radiation zone classifications, and stated that modifications to existing structures or shields which may alter personnel or equipment qualification dose, would be evaluated in the design review process. The basis for this proposed revision was that radiation zone classifications were no longer used and changes to the facility that could affect personnel or equipment dose were evaluated in the context of the station ALARA program. The principal radiological engineer stated

that this change would be submitted for the next revision of the UFSAR. The inspector determined that this proposed change was reasonable.

R8.4 Closed: VIO 50-247/96-080-05; Failure to use a Station Nuclear Safety Committee (SNSC) approved procedure to remove oil from a resin liner

The inspector reviewed Con Edison's Reply to Notice of Violation dated February 28, 1997. The inspector noted that immediate corrective actions involved the immediate suspension of work, performance of a 10 CFR 50.59 safety evaluation, and submittal of a 10 CFR 50.59 evaluation along with the work step list to the SNSC for approval. The SNSC approved the work step list on December 2, 1996. In addition, the Reply to Notice of Violation stated that procedures AD-S-2.305, Radiation Protection Section Step List Procedure" and RW-SQ-4.007, "Process Control Program," would be revised to require the use of SNSC-approved work step lists to perform activities described within the process control program. The Radwaste Engineer informed the inspector that in preparation for implementing corrective actions, they discovered that existing procedural guidance was adequate since procedure AD-S-2.305, Rev. 1, already required safety evaluations and SNSC approval for changes to procedures or work steps that affect the process control program. Licensee staff subsequently determined that the most appropriate corrective action was to conduct a health physics and radwaste management training session to increase awareness of existing procedural requirements. The inspector verified that procedure AD-S-2.305 contained requirements for SNSC approval for revision of procedures under the purview of the process control program, and discussed the content of training conducted for health physics and radwaste management with the individuals that attended the training. The inspector found these corrective actions to be reasonable and complete. No similar problems were identified during the inspection.

R8.5 Closed: VIO 50-247/96-008-02; Improper release of a contaminated area

The inspector verified the corrective actions described in Con Edison's response letter, dated February 28, 1997, to be reasonable and complete. No similar problems were identified during the inspection.

R8.6 UFSAR Review

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, and procedures and/or parameters to the UFSAR description. While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the UFSAR that related to the areas inspected.

The inspector reviewed selected sections of Chapters 12, "Radiation Protection" of the Updated Final Safety Analysis Report (UFSAR) pertaining to radiological controls

to evaluate the accuracy of the UFSAR regarding existing plant conditions and practices.

No additional UFSAR discrepancies were identified during this inspection.

S1 Conduct of Security and Safeguards Activities

a. Inspection Scope

Determine whether the security program, as implemented, met Con Edison's commitments in the NRC-approved security plan (the Plan) and NRC regulatory requirements. The security program was inspected during the period of June 16-20, 1997. Areas inspected included: previously identified items; management support and audits; alarm stations and communications; protected area detection aids; and the vehicle barrier system.

b. Observations and Findings

Two of three previously identified items involving the control of vital area keys and audit effectiveness were closed based on the inspector's review of Con Edison's corrective actions. However, an inspector-follow up-item (IFI) associated with assessment aid weaknesses will remain open until an on going assessment aid upgrade, scheduled for completion in 1997, is evaluated for effectiveness by the regional inspector. Management support is ongoing as evidenced by the procurement of training aids to enhance weapons training, installation of new card readers throughout the site, and the Security Superintendent's position in the organizational structure and reporting chain permits management's awareness of issues and concerns. Audits were thorough and in-depth, protected area detection aids were installed and maintained as described in the NRC-approved physical security plan (the Plan), and alarm station operators were knowledgeable of their duties and responsibilities.

Based on observations and discussions with security management, the inspector determined that Con Edison's provisions for land vehicle control measures satisfy regulatory requirements and licensee commitments. As an enhancement to the inspection, the UFSAR initiative, Section 3.1.2 of the Plan, titled "Protected Area Barrier and Isolation Zone" was reviewed. The inspector determined, based on observations, discussions with security supervision, and by reviewing applicable procedures and shift activity records, that the protected area barrier and isolation zones are being maintained and controlled as required in the Plan and applicable procedures.

c. Conclusions

The inspector determined that Con Edison was conducting its security and safeguards activities in a manner that protected public health and safety and that

the program, as implemented, met Con Edison's commitments and NRC requirements.

S2 Status of Security Facilities and Equipment

S2.1 Protected Area (PA) Detection Aids

a. Inspection Scope

Conduct a physical inspection of the PA intrusion detection systems (IDSs) to verify that the systems were functional, effective, and met licensee commitments.

b. Observations, Findings and Conclusion

On June 18, 1997, the inspector conducted a walkdown of the protected area perimeter and determined, by observations, and by reviewing applicable testing and maintenance records that they were functional and effective, and were installed and maintained as described in the Plan.

S2.2 Alarm Stations and Communications

a. Inspection Scope

Determine whether the Central Alarm Station (CAS) and Secondary Alarm Station (SAS) are: (1) equipped with appropriate alarm, surveillance and communication capability, (2) continuously manned by operators, and (3) use independent and diverse systems so that no single act can remove the capability of detecting a threat and calling for assistance, or otherwise responding to the threat, as required by NRC regulations.

b. Observations and Findings

Observations of CAS and SAS operations verified that the alarm stations were equipped with the appropriate alarm, surveillance, and communication capabilities. The inspector determined, based on observations and discussions with alarm station operators and security supervision, that Con Edison is taking steps towards resolving the long standing assessment aid concerns. As of this inspection, Con Edison had installed a video-capture system as an assessment enhancement, realigned several closed-circuit-television cameras (CCTVs). There was noted improvement in the clarity of the monitors in the alarm stations; however, the inspector noted that several alarm zones still had a long field of view which would make an accurate alarm assessment difficult. To resolve the concern, Con Edison is in the process of adding additional cameras to the effected areas. Con Edison's assessment upgrade is scheduled for completion during 1997. This issue will be reviewed during a subsequent inspection and IFI 96-002-02 will remain open.

Interviews with CAS and SAS operators found them knowledgeable of their duties and responsibilities. The inspector also verified through observation and interviews that the CAS and SAS operators were not required to engage in activities that would interfere with the assessment and response functions, and that Con Edison

had exercised communications methods with the local law enforcement agencies as committed to in the Plan.

c. Conclusion

The alarm stations and communications met Con Edison's Plan commitments and NRC requirements.

S6 Security Organization and Administration

a. Inspection Scope

Conduct a review of the level of management support for Con Edison's physical security program.

b. Observations and Findings

The inspector reviewed various program enhancements made since the last program inspection, which was conducted in January 1997. These enhancements included the procurement of training aids to enhance weapons training, an ongoing assessment aid upgrade, and the installation of new card readers throughout the site. The inspector reviewed the Security Superintendent's position in the organizational structure and reporting chain. The Security Superintendent reports to the Manager Site Protection, who reports to the Manager, Site Services, who reports to the Vice President, Nuclear Power. Additionally, the inspector noted that the access authorization program being safeguards related, is managed directly by the Security Superintendent.

c. Conclusions

Management support for the physical security program was determined to be effective. No problems with the organizational structure that would be detrimental to the effective implementation of the security and safeguards programs were noted.

S7 Quality Assurance in Security and Safeguards Activities

S7.1 Audits

a. Inspection Scope

Review Con Edison's Quality Assurance (QA) report of the NRC-required security program audit to determine if Con Edison's commitments as contained in the Plan were being satisfied.

b. Observations and Findings

The inspector reviewed the 1996 QA audit of the security program, conducted December 9-13, 1996 and January 6-15, 1997, (Audit No. 96-06-A) and the 1996 QA audit of the fitness-for-duty (FFD) program, conducted November 18, 1996 through February 12, 1997 (Audit No. 96-04 D). The audits were found to have been conducted in accordance with the Plan and FFD rule.

The security audit report identified no findings and two observations requiring a response. The FFD audit identified three findings and no observations. The findings involved the untimely review of a positive drug test by the medical review officer (MRO), the untimely review of a drug test by Con Edison's contracted Health and Human Services laboratory, and a laboratory technician's failure to sign a chain of custody form covering a breath alcohol test. The inspector determined that the findings were not indicative of programmatic weaknesses, and the observations would enhance program effectiveness. The inspector determined, based on discussions with security management and the auditors and a review of the responses to the findings, that the corrective actions were effective.

c. Conclusions

The review concluded that the audits were comprehensive in scope and depth, that the findings were reported to the appropriate levels of management, and that the audit program was being properly administered.

S8 Miscellaneous Security and Safety Issues

S8.1 Implementation of Vehicle Barrier System (VBS) Regulations

General

On August 1, 1994, the Commission amended 10 CFR Part 73, "Physical Protection of Plants and Materials," to modify the design basis threat for radiological sabotage to include the use of a land vehicle by adversaries for transporting personnel and their hand-carried equipment to the proximity of vital areas and to include the use of a land vehicle bomb. The amendments require reactor licensees to install vehicle control measures, including vehicle barrier systems (VBSs), to protect against the malevolent use of a land vehicle. Regulatory Guide 5.68 and NUREG/CR-6190 were issued in August 1994 to provide guidance acceptable to the NRC by which Con Edison could meet the requirements of the amended regulations.

Letters dated May 6, 1996 and June 4, 1997, from Con Edison to the NRC forwarded Revision 15/15A to the physical security plan that detailed the actions implemented to meet the requirements of 10 CFR 73.55 (c)(7),(8), and (9) and the design goals of the "Design Basis Land Vehicle" and "Design Basis Land Vehicle Bomb." A NRC June 12, 1997, letter advised Con Edison that the changes submitted had been reviewed and were determined to be consistent with the

provisions of 10 CFR 50.54(p) and were acceptable for inclusion in the NRC-approved security plan.

This inspection, conducted in accordance with NRC Inspection Manual Temporary Instruction 2515/132, "Malevolent Use of Vehicles at Nuclear Power Plants," dated January 18, 1996, assessed the implementation of Con Edison's vehicle control measures, including vehicle barrier systems, to determine if they were commensurate with regulatory requirements and Con Edison's physical security plan.

S8.2 Vehicle Barrier System (VBS)

a. Inspection Scope

The inspector reviewed documentation that described the VBS and physically inspected the as-built VBS to verify it was consistent with Con Edison's summary description submitted to the NRC.

b. Observations and Findings

The inspector's walkdown of the VBS and review of the VBS summary description disclosed that the as-built VBS was consistent with the summary description and met or exceeded the specifications in NUREG/CR-6190.

c. Conclusion

The inspector determined that there were no discrepancies in the as-built VBS or the VBS summary description.

S8.3 Bomb Blast Analysis

a. Inspection Scope

The inspector reviewed Con Edison's documentation of the bomb blast analysis and verified actual standoff distances provided by the as-built VBS.

b. Observations and Findings

The inspector's review of Con Edison's documentation of the bomb blast analysis determined that it was consistent with the summary description submitted to the NRC. The inspector also verified that the actual standoff distances provided by their as-built VBS were consistent with the minimum standoff distances calculated using NUREG/CR-6190. The standoff distances were verified by review of scaled drawings and actual field measurements.

c. Conclusion

No discrepancies were noted in the documentation of bomb blast analysis or actual standoff distances provided by the as-built VBS.

S8.4 Procedural Controls

a. Inspection Scope

The inspector reviewed applicable procedures to ensure that they had been revised to include the VBS.

b. Observations and Findings

The inspector reviewed Con Edison's procedures for VBS access control measures, surveillance and compensatory measures. The procedures contained effective controls to provide passage through the VBS, provide adequate surveillance and inspection of the VBS, and provide adequate compensation for any degradation of the VBS.

c. Conclusions

The inspector's review of the procedures applicable to the VBS disclosed no discrepancies.

S8.5 Review of Updated Final Safety Analysis Report (UFSAR)

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 parameters to the UFSAR description. 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 inspector reviewed Section 3.1.2 of the Plan, Revision 15A, dated June 4, 1997, titled, "Protected Area Barrier and Isolation Zones." The inspector determined, based on observations, discussions with security supervision, and by reviewing applicable procedures and shift activity records, that the protected area barrier and isolation zones are being maintained and controlled as required in the Plan and applicable procedures.

S8.6 Closed: VIO 50-247/96-007-03; Lost Security Keys

On April 9, 1996, a set of security keys were found uncontrolled by a plant employee. The security force member who had lost the keys realized the loss about 30 minutes thereafter, but failed to adhere to security procedures which would have required notification to security management so that compensatory measures could be implemented.

S8.7 Closed: IFI 50-247/96-008-05; Security Audits

During NRC inspection 96-08, conducted in January 1997, the inspector questioned the scope, depth, and thoroughness of recent audits and their effectiveness in keeping management apprised of adverse conditions and trends.

With respect to the above violation (VIO), the inspector reviewed the corrective actions as noted in Con Edison's "Reply to Notice of Violation" dated February 28, 1997. Additionally, the inspector reviewed the 1996 security and fitness-for-duty audits and determined that the audits were comprehensive in scope and depth, and the findings and observations enhanced program effectiveness. The inspector determined, based on reviews of applicable documentation and observations, that the corrective actions implemented by Con Edison to address the above noted issues were reasonable, complete, and appeared to be effective.

V. MANAGEMENT MEETINGS

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of Con Edison management at an exit meeting held on July 17, 1997. Con Edison acknowledged the findings presented. The inspectors asked Con Edison whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

Attachment 1

INSPECTION PROCEDURES USED

37551	Onsite Engineering
40500	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
61726	Surveillance Observation
62707	Maintenance Observation
71707	Plant Operations
71750	Plant Support
81700	Physical Security Program for Power Reactors
TI2515/132	Malevolent Use of Vehicles at Nuclear Power Plants
73753	Inservice Inspection
83750	Occupational Radiation Exposure Controls
92700	Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities

ITEMS OPENED, CLOSED, AND UPDATED

Opened

VIO 50-247/07-007-01	Part 1: Mis-positioned Valve in the AFW System Part 2: EDG Test Requirement not Implemented
VIO 50-247/97-007-02	Poor Foreign Material Exclusion Controls During Maintenance on an Auxiliary Feedwater System Valve
URI 50-247/97-007-03	Loss of FME on the # 21 Reactor Recirculation Pump
NCV 50-247/97-007-04	Radioactive Material Found in a Clean Dumpster
VIO 50-247/97-007-05	Improper Rigging Practices
IFI 50-247/07-007-06	Radiogas Affecting Restricted Area Contamination Monitors

Closed

URI 50-247/96-001-03	Inconsistencies Between the UFSAR Shielding Design Basis Radiation Zones
VIO 50-247/96-080-05	Failure to Use a Station Nuclear Safety Committee (SNSC) Approved Procedure to Remove Oil from a Resin Liner
VIO 50-247/96-008-02	Improper Release of a Contaminated Area
VIO 50-247/96-007-03	Lost Security Keys

IFI 50-247/96-008-05 Security Audits

Updated

IFI 50-247/96-002-02 Assessment Aids Upgrades

LIST OF ACRONYMS USED

ALARA	As Low as Reasonably Achievable
ASME	American Society of Mechanical Engineers
CAS	Central Alarm Station
CCTV	Closed Circuit Television
CSB	Chemical Systems Building
CVCS	Chemical Volume & Control System
DMRG	Daily Management Review Group
EC	Eddy Current
EPRI	Electric Power Research Institute
FCV	Flow Control Valve
FFD	Fitness for Duty
FSAR	Final Safety Analysis Report
FSSIR	Fire Safety Security Inspection Report
HEPA	High Efficiency Particulate Air
HIC	High Integrity Container
HR	Hydrogen Recombiner
IDS	Intrusion Detection System
IFI	Inspector Followup Item
ISI	Inservice Inspection
MRO	Medical Review Officer
MSSRV	Main Steam Safety Relief Valve
NCV	Non Cited Violation
NDE	Nondestructive Examination
NS&L	Nuclear Safety & Licensing
NSB	Nuclear Service Building
OIR	Open Item Report
OSSC	Onsite Storage Container
PDR	Public Document Room
QA	Quality Assurance
RCS	Reactor Coolant System
RES	Request for Engineering Services
RFO	Refueling Outage
ROR	Radiological Occurrence Report
RP&C	Radiological Protection and Chemistry
RRP	Reactor Recirculation Pump
SAS	Secondary Alarm Station
SG	Steam Generator
SOR	Significant Occurrence Report
UFSAR	Updated Final Safety Analysis Report
VBS	Vehicle Barrier System
WCT	Waste Collection Tank