March 31, 2003

Mr. D. Wilson
Site Vice-President
Monticello Nuclear Generating Plant
Nuclear Management Company, LLC
2807 West County Road 75
Monticello, MN 55362-9637

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT
NRC INSPECTION REPORT 50-263/03-02(DRS)

Dear Mr. Wilson:

On February 21, 2003, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Monticello Nuclear Generating Plant. The results of this inspection were discussed on February 21, March 7, and March 24, 2003, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Specifically, this inspection focused on the design and performance capability of the emergency diesel generators and their support systems to ensure that they were capable of performing their required safety-related functions. In addition, the inspection performed the biennial assessment of permanent plant modifications and changes made under 10 CFR 50.59.

Based on the results of this inspection, the inspectors identified eight issues of very low safety significance (Green), all of which were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they were entered into your corrective action program, the NRC is treating the issues as Non-Cited Violations in accordance with Section VI.A.1 of the NRC' s Enforcement Policy. If you deny these Non-Cited Violations, in whole or in part, you should provide a response with a basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Monticello Nuclear Generating Plant.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

David E. Hills, Chief
Mechanical Engineering Branch
Division of Reactor Safety

Docket No. 50-263
License No. DPR-22

Enclosure: Inspection Report 50-263/03-02(DRS)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-263
License No:	DPR-22
Report No:	50-263/03-02(DRS)
Licensee:	Nuclear Management Company, LLC
Facility:	Monticello Nuclear Generating Plant
Location:	2807 West Highway 75 Monticello, MN 55362
Dates:	February 3 through 21, 2003
Inspectors:	P. Lougheed, Engineering Inspector, Lead G. Hausman, Engineering Inspector, I & C J. Neurauter, Engineering Inspector, Mechanical S. Sheldon, Engineering Inspector, I&C H. Walker, Engineering Inspector, Mods & 50.59 J. Panchison, Mechanical Contractor J. Chiloyen, Electrical Contractor
Approved by:	David E. Hills, Chief Mechanical Engineering Branch Division of Reactor Safety

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SUMMARY OF FINDINGS

IR 05000263/03-02(DRS); Nuclear Management Company, LLC.; on 02/03-02/21/03; Monticello Nuclear Generating Plant Safety System Design and Performance Capability Inspection.

The inspection was a three week baseline inspection of the design and performance capability of the emergency diesel generators and associated support systems. In, addition, the biennial review of permanent plant modifications and 10 CFR 50.59 evaluations was concurrently performed. The inspection was conducted by regional engineering specialists, with mechanical and electrical consultant assistance. The inspection identified eight issues of very low significance. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609 significance determination process (SDP). Findings for which the SDP does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

Inspection Findings

Cornerstone: Mitigating Systems

- Green. The inspection team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," regarding the setting of the voltage-restrained overcurrent relays on the emergency diesel generators. A similar issue was identified in 1987, the identical issue in 1990, and corrective actions had not been taken as of 2003.

  The finding was greater than minor because the actuation of the protective relay could prevent a diesel generator from fulfilling its mitigating system cornerstone objective of responding to initiating events and preventing undesirable consequences. The finding was of low safety significance because it did not represent an actual loss of a diesel generator. (Section 1R21.1.b.1)

- Green. The inspection team identified two Non-Cited Violations associated with the emergency diesel generator building ventilation system. The first violation was against 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for not having calculations, tests or drawings which captured the design basis of the system. The second violation was against 10 CFR 50.71(e), "Final Safety Analysis Report Update," for information added to the updated safety analysis report in 1989 which misreported the amount of time available for the operators to take action following a ventilation system failure.

  The finding was greater than minor because: (1) diesel room temperatures were not available in the control room; (2) during actual diesel runs, the operators only entered the rooms approximately once an hour, and did not check the room temperature; and (3) the alarm response procedure for loss of the supply fan contained a number of steps prior to having someone go to the diesel generator room. All these factors contributed to the likelihood that a diesel generator ventilation system failure would not be detected and corrected by the licensee prior to diesel generator being adversely affected. The finding was of low safety significance because, at the time of the inspection, the outside temperatures were extremely cold, and heaters were being used to maintain the diesel room temperatures, and, for the one occasion in the past where high room temperatures were observed, the emergency diesel generators were not called upon and the

ventilation system was not actually lost. Therefore, the finding did not represent an actual loss of a safety function. (Section 1R21.1.b.2)

- Green. The inspection team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," due to the design bases for the emergency diesel generator jacket water system not being correctly translated into calculations, procedures, or drawings.

  The finding was greater than minor because the calculation required multiple revisions which changed the outcome of the results and which necessitated changes to an alarm response procedure. The finding was of low safety significance because it did not represent an actual loss of a safety function. (Section 1R21.2.b.1)

- Green. The inspection team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," due the licensee modifying the venting on the diesel generator day tank and the diesel generator base tank and the modifications not being in accordance with National Fire Protection Association Code 30-1977 requirements. Three separate examples were identified.

  The finding was greater than minor because the finding was associated with design control attributes which affected the objective of the mitigating systems cornerstone to ensure capability of the emergency diesel generator system to respond to initiating events and prevent undesirable consequences. The finding was of low safety significance because no credible fire scenario was identified and the safety functions of the diesel generator day and base tanks were not degraded to the point that they would have caused the emergency diesel generators to be inoperable. (Section 1R21.2.b.2)

- Green. The inspection team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," due to there being no level instrument setpoint calculations for the emergency diesel generators' fuel oil storage tank level instrumentation. Specifically, the design basis technical specification requirement for a minimum seven day supply of 38,300 gallons of diesel fuel oil available in the fuel oil storage tank for one diesel generator at full load was not correctly translated into specifications, procedures, and instructions.

  The finding was greater than minor because the preliminary calculations performed showed an impact on the technical specification operability limit of the diesel fuel oil system and indicated that changes to the instrument calibration procedures might be necessary. The finding was of low safety significance because there was not an actual loss of diesel fuel oil below the design basis technical specification minimum of 38,300 gallons. (Section 1R21.2.b.3)

- Green. The inspection team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," that applied to Bussman FRN fuses installed in safety-related 125 Volt direct current panels. The unknown short circuit current interrupting rating of FRN fuses could have degraded the design basis capability of the affected safety related 125 Volt direct current panels.

  The finding was greater than minor because the failure of an FRN fuse could prevent fulfilling the mitigating system cornerstone objective of responding to initiating events to prevent undesirable consequences by decreasing the reliability and availability of the

system. The finding was of low safety significance because it did not involve an actual loss of a component or system important to safety. (Section 1R21.3.b.1)

- Green. The inspection team identified a Non-Cited Violation of 10 CFR 50.49, "Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants," that applied to the emergency diesel generator rooms' normal radiation environment. Specifically, the inspectors identified that the licensee could not provide the source documentation used to support the emergency diesel generator rooms' normal environmental specification.

  The finding was greater than minor because it potentially affected the ability of a mitigating system to meet its design objective, had the diesel generator rooms truly been a harsh radiation environment. The finding was of low safety significance because it did not involve an actual loss of the diesel generators, due to the bounding environmental conditions for establishing qualification of safety-related equipment not being a harsh radiation environment. (Section 1R21.3.b.2)

- Green. The inspection team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," that applied to the licensee's environmental qualification (EQ) document EQ-Part-B. The EQ-Part-B document contained many errors, including incorrectly identifying the normal temperature range and peak accident temperature for various plant areas.

  The finding was greater than minor because the mitigating system cornerstone objective was affected in that the potential existed that the incorrect temperature values used in the design basis environmental qualification document for the emergency diesel generator rooms to provide the bounding environmental conditions for establishing qualification of safety-related equipment might result in the diesel generators failing to operate when called upon due to components not being qualified for the environment in which they were called upon to operate. The finding was of low safety significance because the inspectors did not identify any actual occurrences where the diesel generator rooms temperatures exceeded 120 degrees and, therefore, the finding did not represent an actual loss of a safety function. (Section 1R21.3.b.3)

REPORT DETAILS

1. REACTOR SAFETY

Cornerstone: Mitigating Systems

1R02 Evaluations of Changes, Tests, or Experiments (71111.02)

Review of Evaluations and Screenings for Changes, Tests, or Experiments

a. Inspection Scope

The inspectors reviewed seven 10 CFR 50.59 evaluations and fifteen screenings. These documents were reviewed to ensure consistency with the requirements of 10 CFR 50.59. The inspectors used Nuclear Energy Institute (NEI) 96-07, Guidelines of 50.59 Evaluations, Revision 1, to determine acceptability of the completed evaluations, and screenings. The NEI document was endorsed by the NRC in Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments," November 2000. The inspectors also consulted Inspection Manual, Part 9900, "10 CFR GUIDANCE: 50.59." Documents reviewed during the inspection are listed at the end of the report.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors reviewed seven permanent plant modifications that were performed by the licensee's engineering staff during the last two years, none of which affected the emergency diesel generators or their associated support systems. The modifications were reviewed to verify that the completed design changes were in accordance with specified design requirements and the licensing bases and to confirm that the changes did not affect the modified system or other systems' safety functions. As applicable to the status of the modification, post-modification testing was reviewed to verify that the system, and associated support systems, functioned properly and that the modification accomplished its intended function. The inspectors also verified that the completed modifications did not place the plant in an increased risk configuration. The inspectors evaluated the modifications against the licensee's design basis documents and the updated safety analysis report. The inspectors also used applicable industry standards, such as the American Society of Mechanical Engineers Code, to evaluate acceptability of the modifications.

b. Findings

No findings of significance were identified.

1R21 Safety System Design and Performance Capability (71111.21)

Introduction

Inspection of safety system design and performance verifies the initial design and subsequent modifications and provides monitoring of the capability of the selected systems to perform design bases functions. As plants age, the design bases may be lost and important design features may be altered or disabled. The plant risk assessment model is based on the capability of the as-built safety system to perform the intended safety functions successfully. This inspectable area verifies aspects of the mitigating systems cornerstone for which there are no indicators to measure performance.

The objective of the safety system design and performance capability inspection is to assess the adequacy of calculations, analyses, other engineering documents, and operational and testing practices that were used to support the performance of the selected systems during normal, abnormal, and accident conditions.

The systems and components selected were the emergency diesel generators and their support systems: diesel generator service water, diesel fuel oil and diesel starting air. These systems were selected for review based upon:

- having a high probabilistic risk analysis ranking;
- having had recent significant issues;
- not having received recent NRC review; and
- being interacting systems.

The criteria used to determine the acceptability of the system's performance was found in documents such as:

- applicable technical specifications;
- applicable USAR sections; and
- the systems' design documents.

The following system and component attributes were reviewed in detail:

System Requirements

Process Medium - water, fuel oil, electricity
Energy Source - electrical power, fuel oil, air
Control Systems - initiation, control, and shutdown actions
Operator Actions - initiation, monitoring, control, and shutdown
Heat Removal - ventilation

System Condition and Capability

Installed Configuration - elevation and flow path operation
Operation - system alignments and operator actions
Design - calculations and procedures
Testing - flow rate, pressure, temperature, voltage, and levels

Component Level

Equipment Qualification - temperature and radiation
Equipment Protection - tornado and electrical

.1 System Requirements

a. Inspection Scope

The inspectors reviewed the updated safety analysis report, technical specifications, system descriptions, drawings and available design basis information to determine the performance requirements of the emergency diesel generators and their associated support systems. The reviewed system attributes included process medium, energy sources, control systems, and operator actions. The rationale for reviewing each of the attributes was:

Process Medium: This attribute required review to ensure that the emergency diesel generators would supply the required loads following design basis events. To achieve this function, the inspectors also verified that the fuel oil system would transfer sufficient oil to maintain diesel operability, that the diesel generator cooling water system would transfer sufficient heat to maintain diesel operability, and that the air intake and exhaust system provided sufficient oxygen to support combustion.

Energy Sources: This attribute needed to be reviewed to ensure that the emergency diesel generators and associated support systems would start when called upon, and that appropriate valves would have sufficient power to change state when so required. To achieve this function, the inspectors verified that the interactions between the diesel generators and their support systems were appropriate such that all components would start when needed.

Controls: This attribute required review to ensure that the automatic controls for starting the diesel generators, and associated systems, were properly established. Additionally, review of alarms and indicators was necessary to ensure that operator actions would be accomplished in accordance with the design.

Operations: This attribute was reviewed because the operators took a number of actions during the monthly and quarterly surveillance tests that had the potential for affecting diesel generator automatic operation. In addition, the operating procedures for loss of offsite power or loss of vital boards permitted the operators to manually load the diesel generators with non-safety related loads. Therefore, operator actions played an important role in the ability of the emergency diesel generators and associated support systems to achieve their safety related functions.

Heat Removal: This attribute was reviewed to ensure that there was sufficient heat removal capability for the diesel generator from the diesel generator room ventilation system.

b. Findings

.1 Emergency Diesel Generator Protective Trips

Introduction: The inspectors identified a finding of very low safety significance involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," associated with protective trips on the emergency diesel generator. Specifically, the inspectors identified that the design bases for the emergency diesel generator protective trips were not translated into relay setpoint calculations, procedures, and instructions, although the corrective actions to prevent recurrence of a significant condition adverse to quality from 1987 should have required those calculations.

Description: The design basis for the emergency diesel generator protective trips, as stated in the updated safety analysis report, Section 8.4.1.2, was that overloads or ground faults did not cause an automatic trip of the generator circuit breakers. The licensee did not have calculations that documented the ground fault protection requirements with the emergency diesel generator operating as the sole source of power to their respective division, nor did they have relay calibration acceptance criteria to provide selective breaker coordination. As the licensee was unable to produce calculations to support the settings for the overloads or ground fault protective trips, the inspectors performed independent calculations.

The inspectors determined that a sustained ground fault as low as two amperes during emergency diesel generator loading could actuate voltage-restrained overcurrent relay 151V and cause tripping of the emergency diesel generator output breaker for the affected division. The team noted that with a pickup setting of five amperes, the 4160 volt feeder ground overcurrent relays could not actuate to isolate a faulty feeder circuit in time to prevent the diesel generator from tripping.

The inspectors also determined that a sustained feeder ground fault would reduce the voltage applied to some of the restraining coils of relay 151V from the normal phase-to-phase voltage to phase-to-neutral voltage by as much as 40 percent. The 40 percent voltage restraint, and higher currents through the relay due to motor starting could increase the sensitivity of the relay and cause its actuation time to be faster than the accelerating time of Bus 15 or 16 motors. The inspectors determined that the lack of selective breaker tripping for feeder ground faults and the lack of protective trip bypasses could result in the spurious tripping of the emergency diesel generator output breaker by its voltage-restrained overcurrent relays during loading. The licensee entered this issue in their corrective action program as condition report 03001905.

In 1987, the licensee received a Severity Level III violation for installation of overcurrent relays that were improperly coordinated and which led to tripping of a 125 volt motor control center due to a ground. In response to this significant condition adverse to quality, the licensee made a commitment to perform an electrical coordination study of safety related systems to prevent further occurrences. Additionally, during the electrical distribution system functional inspection in 1990, this same issue on 4160 buses was identified as a weakness. At that time, the NRC also performed independent calculations to determine the acceptability of the system due to the lack of licensee calculations. The licensee committed to reviewing and revising the relaying protective studies "as necessary."

Analysis: Evaluation of this issue concluded that it was a corrective action deficiency resulting in a finding of very low safety significance (Green). The inspectors concluded that the setting of the voltage-restrained overcurrent relays was a condition adverse to quality and had a credible impact on safety in that they could actuate and trip an emergency diesel generator when the generator was required to perform its safety function. Both diesel generators had this inaccurately set protective relay. The mitigating system cornerstone was affected due to the diesel generators being affected; however, no other cornerstone was determined to be degraded as a result of this issue.

This finding was determined to be greater than minor because the actuation of the protective relay could prevent a diesel generator from fulfilling its mitigating system cornerstone objective of responding to initiating events and preventing undesirable consequences. The inspectors assessed the finding through Phase I of the significance determination process and determined that the finding did not involve an actual loss of a diesel generator. Therefore, this issue screened out of the significance determination process as having very low risk significance or Green.

Enforcement: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires in part, that conditions adverse to quality be promptly identified and corrected. In addition, for significant conditions adverse to quality, corrective actions are to taken to prevent repetition.

Contrary to the above, the licensee failed to take actions to prevent repetition of a significant condition adverse to quality. Specifically, in 1987, the licensee was cited for improperly coordinated overcurrent ground-fault relays. However as of February 21, 2003, the licensee had not taken actions to prevent repetition in that another set of improperly coordinated overcurrent ground-fault relays was identified. Because the licensee has entered this issue into their corrective action system, this violation is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-263/03-02-01).

.2 Diesel Generator Building Ventilation

Introduction: The inspectors identified a finding of very low safety significance associated with the emergency diesel generator building ventilation system. Two Non-Cited Violations were associated with this finding, one against 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and one against 10 CFR 50.71(e), "Final Safety Analysis Report Update." Specifically, the inspectors identified that the design bases for the emergency diesel generator ventilation system was not translated into calculations, procedures, or drawings, and that the information added to the updated safety analysis report in 1989 did not include the latest information developed.

Description: The inspectors noted that in 1988 an issue was identified regarding the diesel generator building ventilation system where the supply and exhaust dampers failed closed on loss of air. At that time, as documented in enforcement conference report 50-263/88-28, the NRC determined that no violations were identified because the results of a special test showed that the ventilation dampers were not required to maintain adequate room temperatures and the ventilation system was not discussed in the safety analysis report. Updated safety analysis report Section 8.4.1.2 was revised in December 1989 to state that a failure of the emergency diesel generator ventilation supply, exhaust, and recirculation dampers would not result in emergency diesel generator inoperability due to overheating. It further stated that extrapolated data from

a special test showed that no operator action to reduce room temperatures would be required for at least six hours following initiation of the emergency diesel generator.

Although the supply and exhaust dampers were modified to fail open to prevent diesel failure, other single failure points still existed at the time of the current inspection, such as the supply fan. At the beginning of the inspection, the inspectors requested the calculations that sized the system and demonstrated the ability of the ventilation system to maintain the design basis temperature in the emergency diesel generator room. The licensee was not able to locate any of these analyses during the inspection, and finally determined that no calculations existed. In addition to the maximum room temperature, the licensee was not able to locate calculations or test data to support supply fan performance considering static pressure losses due to ductwork, dampers, and filters. Also, the ability of the fan inlet filters to sustain differential pressures created by wind loadings was not demonstrated by either calculation or testing.

The licensee was able to provide a copy of the special test data referenced in the updated safety analysis report. However, this test data appeared to only support a time period of approximately two hours before the room temperature reached the design maximum temperature of 120 degrees and there was no indication that the temperature had reached a true equilibrium state. Additionally, it was not apparent from test documentation that the test was performed at the most limiting conditions; for example, emergency diesel generator loading and outside ambient temperature were not documented. Review of the safety review item for the test concluded that supporting evaluations to determine adequacy of the ventilation capacity also did not use the most limiting input data.

The inspectors noted that the licensee documented the room temperature during routine surveillances. In July 2002, the routine surveillance for the #11 emergency diesel generator listed a room temperature starting at 98 degrees and climbing to 103 degrees after one hour of operation. Using the special test results, the inspectors extrapolated that, if the diesel had been required to run, and the ventilation system were lost after the first hour's run, the 120 degrees would have been exceeded in less than an hour.

Analysis: Evaluation of this issue concluded that it was a design control deficiency resulting in a finding of very low safety significance (Green). The design control deficiency was due to the licensee neither having calculations available that documented the ventilation system's ability to maintain the emergency diesel generator rooms within their design basis limits, nor having test data to support the ventilation system operation under design basis conditions. The mitigating systems cornerstone was deemed to be affected as high room temperatures could result in the diesel generator failing to fulfill its design function. No other cornerstones were determined to be degraded as a result of this issue.

This finding was determined to be greater than minor because: (1) diesel room temperatures were not available in the control room; (2) during actual diesel runs, the operators only entered the rooms approximately once an hour, and did not check the room temperature; and (3) the alarm response procedure for loss of the supply fan contained a number of steps prior to having someone go to the diesel generator room. All these factors contributed to the likelihood that a diesel generator ventilation system failure would not be detected and corrected by the licensee prior to diesel generator being adversely affected. Degradation of the design function impacts the base probabilistic risk assessment values used for emergency diesel generator reliability.

The finding was assessed through Phase I of the significance determination process. At the time of the inspection, the outside temperatures were extremely cold, and heaters were being used to maintain the diesel room temperatures. For the one occasion in the past where high room temperatures were observed, the emergency diesel generators were not called upon and the ventilation system was not actually lost. Therefore, the inspectors concluded that the finding did not represent an actual loss of a safety function and the issue screened out as having very low safety significance or Green.

Enforcement: There are two violations associated with this finding. The first is a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," which requires, in part, that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, as of February 21, 2003, the design basis for the diesel generator ventilation system was not correctly translated into plant documents, in that design calculations were not available and the one test available did not appear to support the design basis requirements. The licensee initiated condition reports 03001908 and 03001938 to address this issue.

The second violation is a violation of 10 CFR 50.71, "Maintenance of Records, Making of Reports," Paragraph (e), which requires, in part, that revisions to the safety analysis report be supplied to the Commission on a periodic basis to assure that the information included in the report contains the latest information developed.

Contrary to the above, as of February 21, 2003, the updated safety analysis report, Section 8.4.1.2 did not contain the latest information developed in that it stated that extrapolated data from a special test showed that no operator action to reduce room temperature would be required for at least six hours following initiation of the emergency diesel generator. However, the 1988 special test data actually only showed approximately two hours before the diesel generator room design temperatures were exceeded.

Both violations being treated as Non-Cited Violations, consistent with Section VI.A.1 of the NRC Enforcement Policy because of the low safety significance of the finding, because they are in the licensee's corrective action program, and because of the age of the inaccurate information. (NCV 50/263-03-02-02; 50/263-03-02-03).

.2 System Condition and Capability

a. Inspection Scope

The inspectors reviewed design basis documents and plant drawings, abnormal and emergency operating procedures, requirements, and commitments identified in the updated safety analysis report and technical specifications. The inspectors compared the information in these documents to applicable electrical, instrumentation and control, and mechanical calculations, setpoint changes and plant modifications. The inspectors also reviewed operational procedures to verify that instructions to operators were consistent with design assumptions.

The inspectors reviewed information to verify that the actual system condition and tested capability was consistent with the identified design bases. Specifically, the inspectors reviewed the installed configuration, the system operation, the detailed design, and the system testing, as described below.

Installed Configuration: The inspectors confirmed that the installed configuration of the emergency diesel generators and associated support systems met the design basis by performing detailed system walkdowns. The walkdowns focused on the installation and configuration of piping, components, and instruments; the placement of protective barriers and systems; the susceptibility to flooding, fire, or other environmental concerns; physical separation; provisions for seismic and other pressure transient concerns; and the conformance of the currently installed configuration of the systems with the design and licensing bases.

Operation: The inspectors performed procedure walk-throughs of selected manual operator actions to confirm that the operators had the knowledge and tools necessary to accomplish actions credited in the design basis.

Design: The inspectors reviewed the mechanical, electrical and instrumentation design of the emergency diesel generators and associated support systems to verify that the systems and subsystems would function as required under accident conditions. The review included a review of the design basis, design changes, design assumptions, calculations, boundary conditions, and models as well as a review of selected modification packages. Instrumentation was reviewed to verify appropriateness of applications and set-points based on the required equipment function. Additionally, the inspectors performed limited analyses in several areas to verify the appropriateness of the design values.

Testing: The inspectors reviewed records of selected periodic testing and calibration procedures and results to verify that the design requirements of calculations, drawings, and procedures were incorporated in the system and were adequately demonstrated by test results. Test results were also reviewed to ensure automatic initiations occurred within required times and that testing was consistent with design basis information.

b. Findings

.1 Diesel Generator Heat Removal

Introduction: The inspectors identified a finding of very low safety significance involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." Specifically, the inspectors identified that the design bases for the emergency diesel generator jacket water system was not correctly translated into calculations, procedures, or drawings.

Description: The inspectors reviewed calculation CA-02-186, "Diesel Jacket Water Heat Exchanger Performance Predictions," that was performed in response to a previous NRC concern that the licensee had not considered a potential worst case condition for the operation of the emergency diesel generators (URI 050-263/02-06-01). The inspector at that time noted that the emergency diesel generator jacket water heat exchangers were analyzed and tested to ensure adequate cooling for emergency diesel generator operation at 2,500 kilowatts; however, procedures allowed the emergency diesel generators to be operated at a higher power.

In addition to the above concern, the inspectors determined that the analysis did not use the worst case emergency diesel generator heat load. Higher heat loads were documented in heat exchanger surveillance tests conducted in 1998 and 2002. The licensee entered this issue into the corrective action program as condition report 03001511. The inspectors also identified that the calculation used current tube plugging rather than the design basis maximum. A revision to the calculation was performed using the higher heat rate. This revision also extrapolated the results to emergency diesel generator operation at 3050 kilowatts. The inspectors noted that the results of this calculation showed jacket water cooling temperatures that were sufficiently high that, when instrument uncertainties were considered, a high temperature alarm might be initiated. At the time of the inspection, the alarm response procedure for this alarm instructed the operators to secure the emergency diesel generator. As a result, the licensee initiated condition report 03001929 and revised the alarm procedure to first reduce load rather than shutting down the diesel when it was performing its safety function.

Further review by the inspectors revealed that derating curves transmitted by the diesel vendor in 1992 indicated that derating of the emergency diesel generator was necessary when jacket water temperatures were greater than 190 degrees and the outside air temperature was greater than 90 degrees. These curves had recently been rediscovered by the licensee during their internal self-assessment, as documented in condition report 02011843. The inspectors also noted that certain of the derating curves appeared to apply when coolant temperature out of the engine was above 190 degrees rather than the coolant temperature downstream of the jacket water heat exchanger and prior to entering the engine. The licensee entered this issue into the corrective action program as condition report 03001940.

Analysis: Evaluation of this issue concluded that it was a design control deficiency resulting in a finding of very low safety significance (Green). The deficiency was due to the licensee not using the most conservative diesel generator loading, heat exchanger heat loads or design basis tube plugging when determining the design basis capability of the jacket water heat exchangers. The mitigating systems cornerstone was affected as the jacket water heat exchangers not performing their safety related function could result in the diesel generator failing to fulfill its design function. No other cornerstones were determined to be degraded as a result of this issue.

This finding was determined to be greater than minor because the calculation required multiple revisions which changed the outcome of the results and which necessitated changes to an alarm response procedure.

The finding was assessed through Phase I of the significance determination process. The inspectors agreed with the licensee's position that, despite the wording in the alarm response procedure, that if the diesels were required to perform their safety function, the operators would not trip them even if the alarm came in. Therefore, the inspectors concluded that the finding did not represent an actual loss of a safety function and the issue screened out as having very low safety significance or Green.

Enforcement: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, as of February 21, 2003, the design basis for the diesel generator jacket water heat exchangers were not correctly translated into specifications, drawings, procedures, and instructions, in that design calculation CA-02-186, "Diesel Jacket Water Heat Exchanger Performance Predictions," did not use the worst case diesel generator loading, heat exchanger heat load or allowable tube plugging. Because the licensee entered the violation into their corrective action system as condition reports 03001511, 03001929, and 03001940, this violation is being treated as a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-263/03-02-04).

.2 Venting of Diesel Generator Day and Base Tanks

Introduction: The inspectors identified a finding of very low safety significance involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," with multiple examples. Specifically, the inspectors identified three examples where the licensee modified the plant in 1978 and 1992 and the modifications were not in accordance with National Fire Protection Association (NFPA) Code 30-1977 requirements.

Discussion: In 1978, the diesel generator day tanks were modified to provide emergency relief venting for fire exposure in accordance with NFPA 30-1977 requirements. The requirements for tank emergency relief venting are specified in Article 2-4, "Installation of Tanks Inside of Buildings," of this code. Paragraph 2-4.2, "Vents," specified that vents for tanks inside buildings be designed to the requirements for vents on outside above ground tanks (as described in Article 2-2.5) and, except for tanks containing Class IIIB liquids, that the vents terminate outside the buildings.

Design Change 78M063 modified the existing day tank manhole using long bolts that permitted the cover to lift under internal pressure and relieve into the day tank room. The required emergency relief venting capacity was determined in accordance with NFPA 30-1977, Paragraph 2-2.5.4 and documented in calculations attached to design change 78M063.

The inspectors determined that the use of a self-closing lifting manhole cover design was permitted by NFPA 30 for outside above ground tanks. However, fuel oil was not a Class IIIB liquid and the design, as installed, did not terminate the vent outside the building. The inspectors also noted that the licensee had neither formalized the design calculations nor requested an exemption to NFPA 30-1977. The licensee entered this issue in their corrective action program as condition report 03001951.

As a second example, the inspectors identified that Paragraph 4-4.2.5 of NFPA 30-1977 required that curbs, scuppers, special drains or other suitable means be provided to prevent the flow of liquids under emergency conditions into adjacent building areas.

The inspectors noted that there were no floor drains in the diesel generator day tank rooms and that the diesel generator day tank room access doors were not liquid tight. Therefore, in order to prevent the flow of liquids into the adjacent emergency diesel generator rooms, the inspectors concluded that the licensee was relying on the area below the bottom of the access door to meet this requirement. However, the licensee was unable to provide any calculations that showed that this area had sufficient volume capacity to contain the combined diesel generator day tank contents and sprinkler water in the event of a diesel generator day tank room fire. The inspectors noted that the

licensee's fuel oil transfer design had a loop between the seven day storage tank and the diesel generator day tanks and that a transfer pump ran continuously. Therefore, the inspectors postulated that, upon a fire in the diesel generator day tank room, with the relief vent relieving into the room, the contents of the seven day storage tank could contribute to the volume which needed to be contained, at least until the low level setpoint on the storage tank was reached and operator action was taken to terminate the loop. The licensee entered this issue in their corrective action program as condition report 03001956.

A third issue related to NFPA 30-1977 requirements was identified in connection with the design calculation associated with design change 92Q000. This change was made to provide the emergency diesel generator base tanks with emergency relief venting for fire exposure in accordance with NFPA 30-1977.

Design calculation CA-92-278, "Venting Calculation for the Diesel Generator Fuel Tank," used a provision in NFPA 30-1977 Paragraph 2-2.5.7 to reduce the size of the emergency vents by calculating a reduced air flow rate. However, the inspectors determined that the reduction specified in Paragraph 2-2.5.7 could only be used if the indicated protection was also provided. This protection was a water spray system designed in accordance with NFPA 15 and drainage in accordance with NFPA 30-1977 Paragraph 2-2.3.2.

The inspectors identified that design calculation CA-92-268 assumed that the authority having jurisdiction, the NRC, would allow a water sprinkler system designed in accordance with NFPA 13 in lieu of a water spray system design in accordance with NFPA 15 as specified by NFPA 30-1977. The calculation also assumed that the existing sprinkler system was designed in accordance with NFPA 13, and the existing drainage system was designed in accordance with NFPA 30. Documentation that addressed and resolved these design calculation assumptions was not found.

The licensee stated that Generic Letter 86-10 provided a path such that utilities did not need to get prior NRC approval for minor issues such as the above examples. However, the inspectors concluded that while the generic letter, indeed, allowed for licensees not to obtain prior NRC approval, it did note that an evaluation needed to be performed with all assumptions clearly stated and with compliance with Appendix R readily demonstrable to a person not involved in the evaluation. The generic letter stated that such evaluations needed to be retained for future NRC audits (inspections). The inspectors determined that for each of these cases there was not an evaluation which showed how compliance with NFPA 30-1977 requirements was obtained. Therefore the inspectors deemed the licensee's argument regarding the authority having jurisdiction to be moot. This issue was entered into the licensee's corrective action system as condition report 03001952.

Analysis: Evaluation of these three issues concluded that they were a design control deficiency resulting in a finding of very low safety significance (Green). The licensee failed to ensure that calculations and modifications correctly incorporated design basis requirements. The mitigating systems cornerstone was affected as the diesel generator day and base tanks not performing their safety related function could result in the diesel generator failing to fulfill its design function. No other cornerstones were determined to be degraded as a result of this issue.

The inspectors determined that this finding was associated with design control attributes which affected the objective of the mitigating systems cornerstone to ensure capability of the emergency diesel generator system to respond to initiating events to prevent undesirable consequences, and was, therefore, greater than minor. The lack of adequate design control had the potential to degrade the ability of the emergency diesel generator to perform its safety function.

This finding was evaluated under both Manual Chapter 0609, Appendix A, "Reactor Safety," and Appendix F, "Fire Protection," because some of the deficiencies involved reduction in the defense-in-depth of a fire protection system, such as sprinklers or drains and required evaluation under the fire protection significance determination process (SDP). However, other deficiencies, such as the design of the manhole cover emergency vent, did not involve a reduction of a defense-in-depth barrier of a fire protection system, and therefore had to be evaluated under the reactor safety SDP.

In regard to evaluating the issues under the fire protection SDP, the inspectors determined that a credible fire scenario was difficult to establish. The diesel generator day tanks are enclosed in concrete rooms and the inspectors did not identify any combustion sources in them. For the diesel generator base tanks, the inspectors could not identify any fire that did not start with failure of the emergency diesel generator itself. Therefore, the inspectors concluded that, from a fire protection aspect, the issues screened out using Step 1 (Figure 4-1) of the Appendix F, Phase I screening process as having very low safety significance or Green.

In regard to evaluating the issues under the reactor safety SDP, the inspectors determined that only the mitigating system cornerstone was affected. Through discussions with regional and headquarters fire protection experts, review of existing calculations and performance of independent calculations, the inspectors determined that the safety functions of the diesel generator day and base tanks were not degraded to the point that they would have caused the emergency diesel generators to be inoperable. Therefore, this issue also screened out of the Appendix A, Phase I screening process as having very low safety significance or Green.

Enforcement: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. The licensee was committed to following the National Fire Protection Association codes as part of their Appendix R program.

Contrary to the above, as of February 21, 2003, the design basis, as specified by NFPA 30-1977 was not correctly translated into specifications, drawings, procedures, and instructions, in that modifications were made to the plant and code requirements were not followed or verified.

Because of the very low safety significance of the issues and because they were entered into the licensee's corrective action program as condition reports 03001951, 03001952 and 03001956, the NRC is considering the violation to be a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-263/03-02-05).

.3 Diesel Generator Fuel Oil Storage Tank Level Instrumentation

Introduction: Green. The inspectors identified a finding of very low safety significance involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," that applied to the emergency diesel generators' fuel oil storage tank system, due to there being no level instrument setpoint calculations for the tank level instrumentation. Specifically, the inspectors identified that the design basis technical specification requirement for a minimum seven day supply of 38,300 gallons of diesel fuel oil available in the fuel oil storage tank for one diesel generator at full load was not correctly translated into specifications, procedures, and instructions.

Discussion: The design basis for the emergency diesel generators' fuel oil storage tank system, as stated in the updated safety analysis report and technical specification bases, was to have sufficient diesel fuel oil available to provide a seven day supply for one diesel generator at full load. The inspectors reviewed calculations CA-90-023, "Minimum Allowable Fuel Oil Storage Tank Level," and safety review item 00013, "Minimum Allowable Fuel Oil Storage Tank Level, Addendum 1," and concluded that a minimum level of 96 inches was required in the fuel oil storage tank to meet the design basis technical specification requirement of 38,300 gallons. The inspectors noted that for both calculations an assumption was made that tank level instrumentation was accurate to ±0.5 inches. The inspectors also noted that no uncertainty parameters were discussed or evaluated for the level instrument in either calculation. The inspectors requested the calculations for the actual instrumentation that monitored the diesel fuel storage tank level to confirm the ±0.5 inches accuracy could not be met. The licensee determined that no such calculation existed.

A subsequent review by the licensee's staff determined that the indication error for the storage tank level instrument LIS-1522 was roughly ± 4 inches. This instrument was used to do the monthly technical specification verification that the tank was greater than or equal to 96 inches. No margin was added to the surveillance procedures to account for instrumentation inaccuracies. The control room annunciators, which automatically monitored the storage tank low level of 109 inches and low-low level of 99 inches, had an indication error of approximately ± 4.6 inches. The licensee acknowledged that these errors were not necessarily the worst case, but were based on the best information available during the inspection.

Using the above information and assuming it was the worst case error, the inspectors determined that the low-low level annunciation might not be received until the tank level was 94.4 inches or 1.6 inches below the technical specification value. The inspectors determined that the licensee normally administratively controlled the tank level at greater than 111 inches. The inspectors did not identify any monthly surveillances where the level was below 100 inches such that technical specification operability would be questioned. The licensee entered this issue into their corrective action program as condition report 03001620.

Analysis: Evaluation of this issue concluded that it was a design control deficiency resulting in a finding of very low safety significance (Green). The design control deficiency was due to the licensee not having design calculations available that documented the fuel oil storage tank level instrumentation setpoint requirements. The mitigating systems cornerstone was affected due to the potential undetected degradation of the design basis technical specification capability of the diesel fuel oil

system. No other cornerstones were determined to be degraded as a result of this issue.

The finding was determined to be greater than minor because the preliminary calculations performed showed an impact on the technical specification operability limit of the diesel fuel oil system and indicated that changes to the instrument calibration procedures might be necessary. Additionally, degradation of the design function impacts the base probabilistic risk assessment values used for diesel generator reliability, which impacts an objective of the mitigating system cornerstone.

The finding was assessed through Phase I of the significance determination process. The inspectors concluded that there was not an actual loss of diesel fuel oil below the design basis technical specification minimum of 38,300 gallons. Therefore, the finding did not represent an actual loss of a safety function and the issue screened out as having very low safety significance or Green.

Enforcement: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," states, in part, that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, as of February 21, 2003, the design basis for the emergency diesel generators fuel oil storage tank was not correctly translated into specifications, drawings, procedures, and instructions. Specifically, the calculations for the minimum tank level assumed an instrument accuracy and no calculations or other documents existed to verify this level of accuracy.

Because of the low safety significance of this issue and because it is in the licensee's corrective action program the issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50/263-03-02-06).

.3 Components

a. Inspection Scope

The inspectors examined the diesel generators to ensure that component level attributes were satisfied. As the diesel generators are components, as well as a system, no specific sub-components were selected.

Equipment/ Environmental Qualification: This attribute verifies that the equipment is qualified to operate under the environment in which it expected to be subjected to under normal and accident conditions. The inspectors reviewed design information, specifications, and documentation to ensure that the diesel generators were qualified to operate in within the temperatures and radiation fields specified in the environmental qualification documentation.

Equipment Protection: This attribute verifies that the diesel generators are adequately protected from natural phenomenon and other hazards, such as high energy line breaks, floods or missiles. The inspectors reviewed design information, specifications, and documentation to ensure that the diesel generators were adequately protected from those hazards identified in the updated safety analysis report which could impact the diesels ability to perform their safety function.

b. Findings

.1 Unqualified Fuses Installed in 125 Volt DC Safety Related Distribution Panels

Introduction: The inspectors identified a finding of very low safety significance involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," that applied to Bussman FRN fuses installed in safety-related 125 Volt direct current panels. The unknown short circuit current interrupting rating of type FRN fuse could degrade the design basis capability of the affected safety related 125 Volt direct current panels.

Description: During review of the 125 Volt direct current system protective device characteristics in calculation CA-91-001, the inspectors noted that, in 1990, the licensee identified that FRN fuses were installed in the plant and that these fuses had an unknown interrupting rating. At that the time, the licensee made a decision that the fuses were acceptable for continued use, based on comparison to a FRN-R fuse which did have a known interrupting rating even though the manufacturer was unwilling to make such a comparison . No further actions to replace the fuses appeared to have been taken until 1999, when the licensee undertook a fuse replacement program, as documented in condition report 99003431, "AC fuses used in DC systems." At this time the licensee noted the FRN fuses were obsolete, however, they did not revise or justify continued acceptability for use.

The inspectors noted that FRN fuses were the subject of NRC Information Notice 84-65, "Underrated Fuses Which May Adversely Affect Operation of Essential Electrical Equipment," although that addressed fuses in 250 Volt direct current applications. The inspectors questioned the engineering judgement used in 1990 to accept the FRN fuses, especially given that both FRN-R and FRN fuses were later found to have manufacturing defect problems and a Part 21 report was made in 1996.

The inspectors determined that, at the time of the inspection, there were four FRN 70 amp fuses (2 fuse pairs) in one 125 Volt direct current safety-related panel feeding two safety-related loads. The inspectors also learned that there was a pair of FRN 35 amp fuses in a second 125 Volt direct current safety-related panel, in this case feeding a non-safety-related load. Upon being brought to management's attention, all FRN fuses in safety-related panels were immediately removed from the plant.

Analysis: Evaluation of this issue concluded that it is a corrective action deficiency resulting in a finding of very low safety significance (Green). The inspectors concluded that the potential failure of FRN fuses in safety-related panels was a condition adverse to quality and had a credible impact on safety in that the fuses might not open when required. The mitigating system cornerstone is affected in that the potential failure of the fuses could impact the ability of the affected system to perform its function. Further, failure of a fuse in a safety-related panel could prevent other systems in that panel from performing their safety-related functions. No other cornerstones were determined to be degraded as a result of this issue.

This finding was determined to be greater than minor because the failure of an FRN fuse could prevent fulfilling the mitigating system cornerstone objective of responding to initiating events to prevent undesirable consequences by decreasing the reliability and availability of the system. The inspectors used Phase One of the significance determination process and determined that the finding did not involve an actual loss of a

component or system important to safety. Therefore, this issue screened out of the significance determination process as having very low risk significance or Green.

Enforcement: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires in part, that measures be established to assure that condition adverse to quality are promptly identified and corrected. Contrary to this requirement, the licensee failed to promptly correct a condition adverse to quality. Specifically, although first notified via an information notice in 1984, then identified at Monticello in 1990 and again in 1999, FRN fuses were still installed in safety-related panels as of February 20, 2003. Because the licensee took prompt corrective action to remove the remaining FRN fuses, and entered the violation into their corrective action system as condition reports 03001943 and 03002020, this violation is being treated as a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-263/03-02-07).

.2 Loss of Environmental Qualification Documentation

Introduction: The inspectors identified a finding of very low safety significance involving a Non-Cited Violation of 10 CFR Part 50.49, "Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants," that applied to the emergency diesel generator rooms' normal radiation environment. Specifically, the inspectors identified that the licensee could not provide the source documentation used to support the emergency diesel generator rooms' normal environmental specification.

Description: During the inspectors' review of the licensee's environmental qualification (EQ) document EQ-Part-B, "Northern States Power Company, Monticello Nuclear Generation EQ Central File, Part B Environmental Specifications," the inspectors noted that the emergency diesel generator rooms were specified as a harsh environment under normal conditions, due to high radiation doses. The inspectors questioned this determination as the diesel generators are not normally considered a radiation source. The licensee was requested to provide the reference documentation used to specify the normal radiation environment (Reference 17). Reference 17 was identified as "Monticello Nuclear Generating Plant Radiation Protection Survey Maps 7.10 Q-1&2, and NSP Memo, M. Miller Sr. Plant Health Physicist to Monticello Technical Staff, 1/14/86 DI No. 0910-111-396," and provided the basis for the 40 year total integrated normal background radiation dose for many volumes within the turbine building, including the emergency diesel generator rooms.

After an exhaustive search, the licensee was unable to locate Reference 17. The licensee was able to retrieve some radiation survey records which they believed to be from the time Reference 17 was generated; however, they were unable to find the internal memo and determined that no calculations existed to support the normal radiation environment specified in the EQ document. As a result, the licensee initiated condition report 03001299 and performed an operability evaluation with a supporting calculation that concluded that the emergency diesel generator rooms' normal environment specification was a mild radiation environment. The licensee planned to update the EQ Part B document to reflect this change.

Analysis: Evaluation of this issue concluded that it was a performance deficiency resulting in a finding of very low safety significance (Green). The performance deficiency was due to the emergency diesel generator rooms being erroneously identified as a harsh radiation area. The finding actually involved the licensee failing to implement a required regulatory process, which would not normally fall under the

significance determination process. However, because the effects of the missing reference were able to be evaluated under the SDP, the inspectors processed it accordingly. The finding was considered to be greater than minor because the record could not be retrieved and the licensee "recreation" did not arrive at the same result. Records being un unretrievable is considered to be an example of a more than minor violation per Manual Chapter 0612, Appendix E, 1.C.

The inspectors entered Phase One of the significance determination process and determined that the finding did not involve an actual loss of the diesel generators, because the bounding environmental conditions for establishing qualification of safety-related equipment was not a harsh radiation environment. Therefore, this issue screened out of the significance determination process as having very low risk significance or Green.

Enforcement: 10 CFR Part 50.49, "Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants," requires, in part, that licensees keep EQ information and records current and in auditable form to permit verification of electric equipment important to safety.

Contrary to the above, as of February 21, 2003, the licensee was not able to locate Reference 17, "Monticello Nuclear Generating Plant Radiation Protection Survey Maps 7.10 Q-1&2, and NSP Memo, M. Miller Sr. Plant Health Physicist to Monticello Technical Staff, 1/14/86 DI No. 0910-111-396," which provided the basis for the radiation environment in the diesel generator rooms specified in the licensee's environmental qualification documents.

Because of the low safety significance of this issue and because it is in the licensee's corrective action program, the issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50/263-03-02-08).

.3 Incorrect Temperatures Specified In Environmental Qualification Document

Introduction: The inspectors identified a finding of very low safety significance involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," that applied to the licensee's EQ document EQ-Part-B. The EQ document contained many errors, including incorrectly identifying the normal temperature range and peak accident temperature for various plant areas.

Description: During the inspectors' review of the EQ-Part-B document, the inspectors noted that the normal temperature range for the emergency diesel generator areas was given as 65 to 125 degrees; however the Bechtel design specification, 5828-M-118, gave a range of 60 to 120 degrees. The inspectors also noted that the EQ-Part-B document incorrectly identified the emergency diesel generator room's peak accident temperature as 104 degrees instead of 120 degrees. The inspectors reviewed the monthly diesel surveillances for the last two years and noted that the lowest temperature recorded was 67 degrees in February 2001 and the highest was 103 degrees in July 2002. Also, as noted in Section 1R21.1.b.2 of this report, the licensee had performed a special test in 1989 which showed the diesel room would reach 120 degrees in approximately two hours upon loss of ventilation and this test was not necessarily limiting or bounding. Therefore, the inspectors questioned the accuracy of the EQ-Part-B document, especially in regard to the peak accident temperature. The inspectors noted that the transition from a mild to a harsh environment occurred

somewhere below 104 to 135 degrees per EPRI TR-100516 "Equipment Qualification Reference Manual." Besides the diesel generators themselves, there were electrical panels in the diesel generator rooms which would require evaluation should the design temperatures prove to be above 120 degrees.

The inspectors also noted that the licensee arbitrarily used a starting temperature of 104 degrees for post-accident analyses of other room temperatures such as the high pressure core spray room and the reactor core isolation cooling room. The inspectors noted that the Bechtel design specification listed values of 125 degrees for the high pressure core spray room and 140 degrees maximum temperature for the reactor core isolation cooling room under normal operating temperature for these rooms. While the inspectors did not believe that this additional change in temperature would impact the environmental qualification of any components, the licensee had not evaluated it by the end of the inspection. The licensee initiated condition reports 03001555, 03001273 and 03001411 to address the various errors identified by the inspectors.

Analysis: Evaluation of this issue concluded that it was a design control deficiency resulting in a finding of very low safety significance (Green). The design control deficiency was that the licensee had not translated the correct temperature values specified in appropriate design control documents into the licensee's EQ document. The purpose of the EQ document was to provide the bounding environmental conditions for design basis loss of coolant accident and high energy line break events for use in establishing qualification of safety-related equipment. The mitigating systems cornerstone was affected due to the potential undetected degradation of the design basis capability used in establishing qualification of safety-related equipment. No other cornerstones were determined to be degraded as a result of this issue.

The finding was determined to be greater than minor because the mitigating system cornerstone objective was affected. Incorrect temperature values used in the design basis EQ document for the emergency diesel generator rooms to provide the bounding environmental conditions for establishing qualification of safety-related equipment. This created the potential that the diesel generators might fail to operate when called upon due to components not being qualified for the environment in which they had to operate.

The finding was assessed through Phase I of the significance determination process. The inspectors did not identify any actual occurrences where the diesel generator rooms temperatures exceeded 120 degrees. Therefore, the inspectors concluded that the finding did not represent an actual loss of a safety function and the issue screened out as having very low safety significance or Green.

Enforcement: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, as of February 21, 2003, the design basis for the heating, ventilation and air conditioning design operating temperatures was not correctly translated into specifications, drawings, procedures, and instructions. Specifically, the emergency diesel generator room temperature ranges as identified in Bechtel Specification 5828-M-118 were not correctly translated into the plant's EQ-Part-B document.

Because of the low safety significance of this issue and because it is in the licensee's corrective action program the issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50/263-2003-02-09).

.4 Protection Against Natural Phenomena (Tornadoes)

The updated safety analysis report, Section 2.3.5, stated that structures and systems necessary for a safe shutdown of the reactor and maintaining a shutdown condition were designed to withstand tornado wind loadings of 300 mph. The inspectors requested analyses or other documentation to confirm that the emergency diesel generator combustion air intake and exhaust piping and components (specifically exhaust silencers) were capable of withstanding loads commensurate with design basis tornado wind loads as the silencers were located on the roofs of the diesel generator buildings. Furthermore, the inspectors noted during a walkdown that, due to their location, the silencers did not appear to be protected against tornado wind loadings.

The inspectors were provided with a 1992 internal memorandum that noted portions of the exhaust and intake air piping located on the emergency diesel generator building roof were not adequately supported to withstand tornado wind forces. The memorandum stated that failure of the silencers during a tornado event would not affect the function of the diesels because the exhaust silencers did not contribute to the operation of the diesels and were used mainly to reduce noise. The inspectors' concern noted that this statement did not take into account the fact that if the silencers were crimped, blocked, or otherwise sufficiently damaged to restrict air flow they would create a back pressure on the emergency diesel generators and cause them to stall.

The inspectors reviewed a probablistic risk assessment analysis II.SME.95.001, "Monticello Other IPEEE - Tornado Missile Assessment," that documented a very low probability of a tornado generated missile striking both emergency diesel generators' exhaust piping and silencers. The inspectors concluded that consideration only of tornado generated missiles was incomplete in that design basis wind loadings could also cause crimping or blockage of the silencers in and of themselves. The licensee was unable to provide documentation to confirm that combustion air intake and exhaust piping would not be adversely affected by design basis tornado wind loadings. Based on the absence of design calculations and the incomplete probabilistic risk analysis, the inspectors were unable to evaluate the effect on the emergency diesel generator operation. The licensee initiated condition report 03001909 and was working on an analysis to evaluate the effects of wind loading on the silencers. This issue is considered an unresolved item, pending receipt and review of the licensee's analysis (URI 50-263/03-02-10).

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution (PI&R)

.1 Review of Condition Reports

a. Inspection Scope

The team reviewed a sample of emergency diesel generator and associated support system problems that were identified by the licensee and entered into the corrective action program. The inspectors reviewed these issues to verify an appropriate threshold for identifying issues and to evaluate the effectiveness of corrective actions related to design issues. In addition, condition reports written on issues identified during the inspection were reviewed to verify adequate problem identification and incorporation of

the problem into the corrective action system. The specific corrective action documents that were sampled and reviewed by the team are listed in the attachment to this report.

b. Findings

No findings of significance were identified.

.2 Cross-References to PI&R Findings Documented Elsewhere

The inspectors noted that four of the findings and the unresolved item had a problem identification and resolution element where the licensee had been made previously aware of at least part of the problem, but corrective actions were either ineffective or non comprehensive:

- Inadequate resolution of ground fault relay issue: The overall issue was the subject of an enforcement conference in 1987 and the specific relays were identified as being improperly set during the electrical distribution system function inspection in 1990. The 1990 inspection also noted the lack of calculations for these relays, a problem still existing in 2003.

- Incomplete resolution of ventilation issue: Although the dampers were modified to fail safe, the actions taken when revising the updated safety analysis report were not supportable. In addition, no actions were taken to address other single failure points in the system, or to ensure that the ventilation system could actually meet its safety function.

- Inadequate follow through on vendor information on diesel generator derating: The licensee did not take any action upon receiving derating curves from the diesel generator vendor in 1992, despite having increased their design maximum river temperature since that time period and having actually experience hotter-than-normal summer temperatures.

- Inadequate follow through on industry information on unqualified fuses: There was a 19 year time lag between when the licensee first was notified about a problem with FRN fuses and when the last fuses were removed from safety related panels.

- Inadequate follow through on internal memorandum regarding diesel generator silencers: Although an internal memorandum identified that the diesel exhaust piping and silencers were not tornado proof, no action was taken to correct the situation. The licensee accepted the memorandum's conclusion that the silencers were not necessary, even though industry experience was available that showed otherwise.

4OA5 Other

The inspectors reviewed items discussed in previous inspection reports to determine if further regulatory action was required to be taken.

.1 (Closed) Unresolved Item 50/263/01-15-02: "Non-Conservative Residual Heat Removal Service Water Pump Acceptance Criteria"

a. Inspection Scope

Unresolved Item 50/263/01-15-02 noted that the licensee had identified a number of non-conservatisms in calculation CA-97-041 for the residual heat removal service water pump acceptance criteria such that a positive differential pressure across the residual heat removal heat exchanger could not be shown to exist under worst case design basis conditions. The inspectors reviewed Calculation CA-01-174, and its revisions. This calculation replaced the calculation referenced in the unresolved item. The revised calculations showed that a positive differential pressure was maintained in the residual heat removal heat exchanger even under worst case conditions. Therefore, the system was operable at all times. The inspectors also reviewed condition reports associated with the issue to ensure that corrective actions were properly incorporated.

b. Findings

No findings of significance were identified.

.2 (Closed) Unresolved Item 50-263/02-06-01: "Licensee May Not Have Considered Worst Case Conditions for Operation of the Emergency Diesel Generators"

a. Inspection Scope

Unresolved Item 50-263/02-06-01 identified that the emergency diesel generator jacket water heat exchangers were analyzed and tested to ensure adequate cooling for diesel operation at 2,500 kilowatts; however, emergency procedures allowed the diesels to be operated at a higher power. This item was left unresolved pending licensee recalculation to ensure the heat exchangers could remove adequate heat at the higher power levels.

b. Findings

This issue is reviewed in Section 1R21.2.b.1 and a Non-Cited Violation was identified. The unresolved item is closed.

4OA6 Meetings, Including Exits

Exit Meeting

The inspectors presented the inspection results to Mr. D. Wilson, and other members of licensee management, on February 21, 2003. Follow-up telephone exit meetings were held on March 7 and 24, 2003, to clarify the inspection findings. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. Proprietary information was reviewed during the inspection, as documented in the list of documents. The inspectors confirmed that the proprietary material had been returned and discussed the likely content of the inspection report. The licensee did not indicate any potential conflicts with information presented.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
P. Albares, Program Engineering Manager
R. Baumer, Compliance Engineer
T. Crippes, Work Planning Supervisor
D. Fadel, Director of Engineering
J. Forbes, NMC Vice-President
S. Hammer, Design Engineering Manager
S. Nelson, Senior System Engineer, Turbine Systems Group
D. Neve, Licensing Project Manager
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B. Burgess, Chief, Reactor Projects Branch 2
S. Burton, Senior Resident Inspector
D. Kimble, Resident Inspector
C. Pederson, Director, Division of Reactor Safety
C. Roque-Cruz, NRC Intern

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50/263-03-02-10	URI	Inadequate Diesel Generator Exhaust Piping Protection Against Natural Phenomena (Tornadoes)

Opened and Closed

50/263-03-02-01	NCV	Failure to Remove or Properly Coordinate Ground Fault Relay Protective Trips
50/263-03-02-02	NCV	Lack of Calculations, Tests or Other Documents to Show Ventilation System Can Support its Safety Function
50/263-03-02-03	NCV	Unsupportable Statement in Updated Safety Analysis Report: Six Hours for Operator Action on Loss of Ventilation
50/263-03-02-04	NCV	Jacket Water Heat Exchanger Calculation Did Not Use Worst Case Conditions
50/263-03-02-05	NCV	Day and Base Tank Vent Modifications Not in Accordance with NFPA-30-1977
50/263-03-02-06	NCV	No Calculation for Fuel Oil Storage Tank Level Instrument
50/263-03-02-07	NCV	Unqualified FRN Fuses Installed in Safety Related Panels
50/263-03-02-08	NCV	Unable to Locate Reference Providing Basis for Diesel Generator Rooms Being Harsh Radiation Environment

50/263-03-02-09	NCV	Environmental Qualification Basis Document Temperature Values Not Supportable

Closed

50/263/01-15-02	URI	Non-Conservative Residual Heat Removal Service Water Pump Acceptance Criteria
50-263/02-06-01	URI	Licensee May Not Have Considered Worst Case Conditions for Operation of Emergency Diesel Generators

Discussed

None

LIST OF DOCUMENTS REVIEWED

Inspection Procedure 71111.02

Number	Title	Revision or Date
Evaluations Performed in Accordance with 10 CFR 50.59		
01005	Demonstration of Maximum Required Accident Flow through AO-10-46A and AO-10-46B to Satisfy Section XI Full Stroke Test Requirement	March 3, 2001
01008	Change to the Technical Specification Basis Section 3.6.A to Reflect 50°F in Recirculation Loop Temperature Maintains Fuel Within Allowable Limits	April 9, 2001
01011	Evaluation of Following the Emergency Operating Procedure Guidance for Bypassing the Reactor Core Isolation Cooling High Area Temperature and Low Steam Line Pressure Isolations	July 12, 2001
01015	Change of Administrative Limit on High River Water Temperature from 85°F to 87°F	August 28, 2001
02001	Operating Three Service Water Pumps During the Summer	March 29, 2002
02003	Residual Heat Removal Service Water Pump Emergency Core Cooling System Load Shed Bypass Procedure and Bypass Switches	May 10, 2002
02005	Alternative Mark I Containment Analysis Procedure	October 1, 2002
Procedures (Administrative Work Instructions)		
4 AWI-05.06.01	Safety Review Item	Revision 8
4 AWI-05.06.02	10 CFR 50.59 Applicability and Screening	Revision 5
4 AWI-05.06.03	10 CFR 50.59 Evaluations	Revision 2

Number	Title	Revision or Date
Screenings Performed in Accordance with 10 CFR 50.59		
01-0099	The Information in Updated Safety Analysis Report Section 7.11.2 and Table 7.11-1 is Obsolete and Is to Be Deleted	June 19, 2001
01-0127	Design Change 00Q105: High Pressure Coolant Injection Steam Line Support Modifications	July 23, 2001
01-0349	Main Condenser Mechanical Vacuum Pump Suction Valve Operability Test	September 24, 2001
01-0364	Errors in Dose Rate Units Shown on Updated Safety Analysis Report Figure14.9-7	October 1, 2001
01-0568	Monticello Nuclear Generating Plant Single Line Diagram Station Connections	October 1, 2001
01-0583	Add Header to Updated Safety Analysis Report Table 5.2 to Clarify That Stroke Times Are Specified for the Close Direction	December 20, 2001
02-0002	Administrative Change to the Description of the Position of Shift Operations Manager in Updated Safety Analysis Report Chapter 13	January 4, 2002
02-0044	Work Order Interface to EMPAC Materials Management	January 21, 2002
02-0070	Drawing M-103 is Incorrect for Computer Points CFW118 And CFW119	January 30, 2002
02-0139	Reactor Primary System Transients Effects and Mass	March 5, 2002
02-0232	Added System and Component Operability Requirements for Fire Suppression Water Spray Shields	April 18, 2002
02-0233	System Operation of the Circulating Water System	April 18, 2002
02-0241	Minor Correction to a Drawing: DRR MO-02-0060 for NH-54823-3 Same Valve Label Was Used Twice	April 23, 2002
02-0662	Revise Procedure 2140 and 2138 to Incorporate Revised Technical Specification 3.7.A.5.b for License Amendment Request 130	November 4, 2002
02-0707	A Number of Updated Safety Analysis Report Figures and Drawings Are Being Revised to Improve Their Legibility	December 6, 2002

Inspection Procedure 71111.17B

Condition Reports Reviewed During the Inspection		
98002913	Rerate Piping Inspection - Increased Vibration	November 10, 1998
99003640	Action 00000039: Investigate Cause of High Pressure Coolant Injection Steam Line Vibration and Determine Any Actions Needed to Prevent Recurrence	January 4, 2000

Number	Title	Revision or Date
Condition Reports Written as a Result of the Inspection		
03001509	Results of the Vibration Analysis on the High Pressure Coolant Injection Steam Line (PS 18-8") Are Not Well Documented	February 10, 2003
Modifications (Design Change Notices)		
00Q005	Improvements for MO-2032, MO-2071, MO-2075 and MO-2076	Revisions 0 & 2
00Q030	Resolution of Flooding Issues for the Lower 4 Kilovolt Switchgear Room	Revision 1
00Q155	Emergency Service Water Pump Spray Hoods	Revision 0
01A011	Control Rod Drive Pump Rotating Assembly and Bearing Housing Upgrade	Revision 6
01A035	Replace RV-3193 Residual Heat Removal Service Water Pump Seal Water Supply	Revision 7
01Q055	Alternate Shutdown System Hot Short Improvements	Revision 1
00Q105	High Pressure Coolant Injection Steam Line Support Modifications	Revision 0
Procedures (Administrative Work Instructions)		
4 AWI-05.01.10	Project Descriptions	Revision 9
4 AWI-05.01.11	Design Change Package Content	Revision 11
4 AWI-05.01.13	Design Change Package Review and Approval	Revision 14

Inspection Procedure 71111.21

Calculations		
CA-89-048	Engineering Analysis EA-89R070-01 Modification 89Z100 Relay Settings	November 4, 1989
CA-90-023	Minimum Allowable Fuel Oil Storage Tank Level	December 4, 1990
CA-90-023 Addendum 1	Minimum Allowable Fuel Oil Storage Tank Level	May 1, 2000
CA-90-064	Diesel Day Tank Qualification Model Development	Revision 0
CA-90-067	Operability Analysis Results of Standby Diesel Generator Day Tanks	Revision 0
CA-91-001	125 Volt Direct Current Fault Current	Revision 0
CA-91-012	125 Volt Direct Current Load Profile Study	Revision 3
CA-91-092	Plant Fault Study Calculation 2R Transformer, 2RS Reactor In-Line 2R Primary Tap Equal -5 Percent, for High Voltage Breakers	Revision 6
CA-92-220	Degraded Voltage Setpoint Calculation	Revision 0

Number	Title	Revision or Date
CA-92-224	Emergency Diesel Generator Loading	Revision 4
CA-92-278	Venting Evaluation for the Diesel Generator Fuel Tank	Revision 2
CA-93-066	Degraded Voltage Setpoint, 1R Transformer, Loss of Coolant Accident Load Emergency Core Cooling System Pumps Running	Revision 4
CA-94-106	Determination of Drywell High Pressure Instrument Setpoints (PS-10-101 A, B, C, & D)	Revision 0
CA-95-005	Low-Low Water Level Emergency Core Cooling System Initiation	Revision 0
CA-95-027	Determination of Instrument Service Conditions for Input into Setpoint Calculation (Attachment 1 Page 40)	Revision 1
CA-95-047	Instrument Setpoint Calculation High Reactor Pressure Scram, PS-2-3-55A, B, C, D	Revision 0
CA-95-065	Determination of Drywell High Pressure Instrument Setpoints (PS 5-12A, B, C, D)	Revision 0
CA-96-004	Design Change 93Q415, Electrical Calculations	Revision 1
CA-97-198	Composite Profiles for Environmental Qualification	Revision 1
CA-98-0169, Appendix F	Composite Profiles for Environmental Qualification in the Turbine Building	Revision 0
CA-00-137	Emergency Diesel Generator Capability to Accept Service Water Pump Loading During Emergency Core Cooling System Loading	Revision 0
CA-01-111	#11 and #12 Emergency Diesel Generator Air Start	Revisions 0 & 1
CA-01-114	Emergency Diesel Generator Emergency Service Water Heat Exchanger Performance Test - 2001	Revision 0
CA-01-144	Emergency Diesel Generator Heat Exchanger Thermal Performance Rebaseline Calculation	Revision 1
CA-01-158	Residual Heat Removal Heat Exchanger Differential Pressure for Worst Case Conditions	Revision 7
CA-01-174	Minimum Residual Heat Removal Service Water Pump Differential Pressure	Revisions 0, 1 & 2
CA-02-147	Emergency Diesel Generator Emergency Service Water Heat Exchanger Performance Test - 2002	Revision 1
CA-02-186	Diesel Jacket Water Heat Exchanger Performance Predictions	Revision B
DCN 78M063 Appendix IIB - Attachment I	Conversion of Heating Boiler and Diesel Day Tank Manholes to Emergency Vents - Emergency Venting Calculations	September 12, 1978
FBS-D12-2	Fuse/Breaker Study, D12-2.tcc Coordination	Revision 0
FBS-D111-11-1	Fuse/Breaker Study, D111-11-1.tcc Coordination	Revision 0
FBS-D111-22-1	Fuse/Breaker Study, D111-22-1.tccc Coordination	December 17, 2002
FBS-0505-1	Fuse/Breaker Study, FBS-0505-1.tcc Coordination	February 1, 2002

Number	Title	Revision or Date
MN.9116.0100-01	Piping Model Development, Diesel Generator #11 and Diesel Generator #12 Lines	Revision 1
MN.9116.0100-04	Piping and Support Analysis Results, Diesel Generator #11 and Diesel Generator #12 Lines	Revision 1
MN.9116.0300	Evaluation of Nozzles on the Diesel Day Tanks and Base Tanks	Revision 1
MWI-3-M-2.06	Fuse and Breaker Coordination Study	Revision 2

Condition Reports Reviewed During the Inspection

99093431	Alternating Current Fuses Used in Direct Current Systems	November 17, 1999
00003631	Non-Conservative Heat Transfer Rate Used in Emergency Diesel Generator Bounding Calculation and Heat Exchanger Flow Not Verified in Heat Exchanger Performance Test	September 21, 2000
01004456	CA-97-041 is Non-Conservative in Determining Residual Heat Removal Heat Exchanger Differential Pressure	July 27, 2001
01004483	Technical Specification, Updated Safety Analysis Report and Design Basis Document Basis Not Clearly Defined for Residual Heat Removal Service Water Pump and Residual Heat Removal Heat Exchanger Differential Pressure Requirements	July 30, 2001
01005064	Performance of the 2001 Environmental Qualification and High Energy Line Break Self-Assessment	August 28, 2001
02001013	Documentation of NRC Resident Question Regarding the Application of Technical Specification Deviations in As-Found Acceptance Criteria	February 5, 2002
02006048	Insufficient Thread Engagement on the Expansion Joint Flange Connections Downstream of #11 and #12 Emergency Diesel Generator Emergency Service Water Heat Exchangers Outlets	July 2, 2002
02006336	#12 Emergency Diesel Generator Lube Oil Lead Content Trend Increasing to Point of Additional Monitoring	July 11, 2002
02007088	NRC Questioned Our Emergency Diesel Generator Mission Time and Criteria for Interpreting Lube Oil Trending	August 1, 2002
02007564	Lack of Ventilation to Diesel Oil Pump House May Pose a Safety Hazard and Air Quality Degradation	August 14, 2002
02008740	#12 Emergency Diesel Generator Bearing Vibrations Exceed Manufacturer Acceptance Criteria	September 16, 2002
02009522	Emergency Diesel Generator Design Output Loads in Updated Safety Analysis Report	November 4, 2002

Number	Title	Revision or Date
02009735	#11 Emergency Diesel Generator Air Start System Would Not Shut Down Within Acceptance Band	October 17, 2002
02009802	Rust Found in Instrument Line for Emergency Diesel Generator #1 Air Start System Compressor	October 21, 2002
02009917	Revise B.09.08-05, ARP 93-A-13, and ARP 94-A-13 to Include Guidance for Operating the Emergency Diesel Generators Overloaded	October 24, 2002
02011843	Implementation of Emergency Diesel Generator Derating Curves	December 31, 2002
03000526	Site Lacks Process to Assure That Age-Related Instrument Drift Is Identified and Corrected Prior to Impacting Operability	January 16, 2003
03000884	#11 Emergency Diesel Generator Start #2 Circuit May Not Have Been Properly Tested after Fuse Replacement	January 24, 2003

Condition Reports Written as a Result of the Inspection

03001247	Service Water Line to Emergency Diesel Generator Emergency Service Water Supports Has a 1/8" Clearance Between the Support and Base Plate	February 3, 2003
03001252	#12 Emergency Diesel Generator Oil Pump P-224 Has Minor Oil Leak	February 4, 2003
03001273	Environment Qualification Document EQ-Part-B Contains an Incorrect Reference	February 4, 2003
03001299	Environment Qualification Document EQ-Part-B, Revision 5 States That the Emergency Diesel Generator Rooms Have a 40 year Total Integrated Dose of 4.20E5 Rad, Which Is Radiation Harsh	February 5, 2003
03001316	Emergency Diesel Generator Air Start System Capability Test Acceptance Criterion Is Non-Conservative	February 5, 2003
03001348	CA-95-047 Has Incorrect Assumption for Average Temperature in the Reactor Building	February 6, 2003
03001357	Calculation CA-98-169 Contains an Incorrect Reference	February 6, 2003
03001411	Document EQ-Part-B, Revision 5, States an Incorrect Normal Temperature Range for the Emergency Diesel Generator Rooms	February 7, 2003
03001511	Worst Case Heat Load in Jacket Water Heat Exchanger Analysis was Not Conservative	February 12, 2003
03001555	Document EQ-Part-B Incorrectly Lists the Emergency Diesel Generator Room Accident Design Temperature as Normal Room Temperature Upper Limit	February 11, 2003

Number	Title	Revision or Date
03001582	Drawing NE-36403-3, Revision G Found Missing Label on Contacts of Relay 14A-K11A	February 12, 2003
03001586	CA-95-065 Has an Unnecessary Assumption	February 12, 2003
03001598	Drawing NF-36177 Does Not Show Correct Number of Differential Relays Associated with Emergency Diesel Generators #11 and #12	February 13, 2003
03001620	No Instrument Deviation/Setpoint Calculation Exists for the Diesel Oil Storage Tank Instruments	February 13, 2003
03001679	#11/#12 Emergency Diesel Generator Air Start Calculation CA-01-111 was Not Revised to Reflect 202 psi Compressor Setpoint Change	February 14, 2003
03001889	Calculation 01-111 Not Performed per Industry Standards	February 19, 2003
03001905	Assess Coordination of Emergency Diesel Generator Source Breaker and Feeder Ground Fault	February 20, 2003
03001908	Existing Analysis Supporting Emergency Diesel Generator Room Ventilation Capacity is Inadequate	February 20, 2003
03001909	No Existing Analysis to Support Emergency Diesel Generator Exhaust Pipe Capability to Survive Tornado High Winds	February 20, 2003
03001916	Interrupting Rating for FRN Type Fuse Not Established and Not Consistent Between CA-91-001 and Efforts under Condition Report 99003431	February 20, 2003
03001929	Alarm Response Procedure for an Emergency Diesel Generator High Temperature Alarm Has Not Been Revised	February 20, 2003
03001936	Condition Report That Assessed Personnel Hazards in the Fuel Oil Transfer Pump House Was Weak	February 20, 2003
03001938	Six Hour Emergency Diesel Generator Room Heatup with Dampers Closed Updated Safety Analysis Report Statement Can Not Be Verified	February 20, 2003
03001940	Emergency Diesel Generator Derating Curves Have Not Been Implemented	February 21, 2003
03001943	FRN Fuses Installed in Direct Current Applications	February 21, 2003
03001948	Gas Can Found in Diesel Fuel Oil Pump House	February 21, 2003
03001951	Emergency Diesel Generator Emergency Vents Exhaust into Day Tank Room	February 21, 2003
03001952	Proper Authorization Not Received Prior to Determining Emergency Diesel Generator Base Tank Emergency Venting Requirements	February 21, 2003
03001956	No Calculation Found for Emergency Diesel Generator Day Tank Room Capacity to Contain Fuel Oil and Water in the Event of a Fuel Spill and/or Fire	February 21, 2003

Number	Title	Revision or Date
03001997	Emergency Diesel Generator SSDI Self Assessment Not Effective in Preparing Site for NRC Inspection	February 21, 2003
03002119	Some SSDI Potential Findings Appear Contradictory to Application of NUREG 1397 and Appendix B Program Implementation	February 28, 2003
03002020	NRC SSDI Exit Meeting Preliminary Finding on 10 CFR Part 50 Appendix B Criterion XVI Timeliness of FNR Fuse Replacement Actions	February 21, 2003
03002766	Safety-related Status of Equipment Determined Solely Through CHAMPS and Not Verified Resulting in Incorrect Data to NRC	March 14, 2003

Design Basis Documents

B.8.1.2	Emergency Diesel Generator - Emergency Service Water	Revision 2
B.8.7	Safety Related Portions of the Heating, Ventilating and Air Conditioning System	Revision C
B.9.8	Emergency Diesel Generator	Revision C
T.13	Design Basis Document for Regulatory Guide 1.97	Revision 0

Drawings

Electrical Drawings

NE-36394-18	Emergency Service Water Pumps	Revision F
NE-36394-18A	Emergency Service Water Pump P-111B and Scheme B3419	Revision F
NE-36399-9	Essential Bus Transfer Circuits - Division I	Revision N
NE-36399-9B	Essential Bus Transfer Circuits - Division II	Revision B
NE-36403-2	Standby Diesel Generator ACB 152-502 Control	Revision Z
NE-36403-2A	Standby Diesel Generator ACB 152-602 Control	Revision J
NE-36403-3	Schematic Diagrams Standby Diesel Generators	Revision G
NE-36403-3A	#12 Standby Diesel Generator Start Circuits 1 & 2, Schematic Diagrams	Revision J
NE-36403-4	#11 Standby Diesel Generator Control Scheme G30	Revision J
NE-36403-4A	#12 Standby Diesel Generator Control Scheme G40	Revision G
NE-36438-9	Diesel Oil Transfer Pump P-11, Service Pump P-77, Pump House Transformer XP54 and Heating Boiler Tank T-46 Valve SV-1531 Control	Revision R
NE-36640-3	Schematic Diagram 125, 250 ,24 Volt Direct Current Systems	Revision AC
NE-93576	Single Line Diagram 480 Volt Motor Control Center 34	Revision H

Number	Title	Revision or Date
NF-36175	Single Line Diagram Station (Connections)	Revision AE
NF-36177	Single Line Meter and Relay Diagram 4160 Volt Buses 13,14,15,16	Revision T
NF-36298-1	Electrical Load Flow One Line Diagram	Revision P
NF-36298-2	Direct Current Electrical Load Distribution One Line Diagram	Revision C
NF-36397	Schematic Meter and Relay Diagram 4160 Volt System - Buses #11, #12, #13, #14, #15, #16	Revision Y
NF-36397-1	Schematic Meter and Relay Diagram 4160 Volt System, continued	Revision D
NF-100335-1	Alternate Shutdown System Schematic	Revision H
NF-100335-3	Alternate Shutdown System Schematic	Revision C
NF-100342	Emergency Core Cooling System Division I Analog Trip Cabinet C-303A Elementary Diagram	Revision C
NF-100343	Emergency Core Cooling System Division II Analog Trip Cabinet C-303B Elementary Diagram	Revision C
NH-178635	Substation Single-Line Diagram	Revision B
NL-36077 Sheet 6	Electrical Switch Data Sheet	Revision B
NX-7833-21-1	Core Spray System Schematic Diagram	Revision AC
NX-7833-21-5	Core Spray System Schematic Diagram	Revision J
NX-8875-9-10	Power and Control Circuits Unit-8 A602	Revision R
NX-8875-50-11	Power and Control Circuits Unit-9 A502	Revision R
NX-9064-28-2	Connection Diagram Panel CO8	Revision E
NX-9216-5-1	Physical Schematic and Field Connections - Model #999 #11 Emergency Diesel Generator	Revision K
NX-9216-5-3	Physical Schematic and Field Connections - Model #999 #11 Emergency Diesel Generator	Revision G
NX-9216-5-3A	Physical Schematic and Field Connections - Model #999 #12 Emergency Diesel Generator	Revision E
NX-9216-5-4	Physical Schematic and Field Connections - Model #999, #11 Emergency Diesel Generator	Revision G
NX-9216-5-4A	Physical Schematic and Field Connections - Model #999, #12 Emergency Diesel Generator	Revision B

Mechanical Drawings

NF-36672	Standby Diesel Generators Arrangement & Piping	Revision F
NF-36745-A	Plans and Sections Heating and Ventilation Standby Diesel Generator Building	Revision 5
NF-36760	Grading, Drainage, & Utilities Details	Revision E
NF-119034-1	Fuel Oil Flow Meter Installation	Revision C

Number	Title	Revision or Date
NF-119034-2	#12 Diesel Generator Fuel Oil System	Revision A
NF-119034-3	#11 Diesel Generator Fuel Oil System	Revision A
NX-8431-5	Underground Diesel Fuel Oil Tank	November 7, 1967
NX-8431-29	Diesel Oil Day Tank	October 17, 1968

Piping and Instrumentation Drawings (P&IDs)

NH-36051	Diesel Oil System, Sheet 1 of 2	Revision AD
NH-36051	Diesel Oil System, Sheet 2 of 2	Revision H
NH-36259-1	Auxiliary & Heating Steam System - Standby Diesel Generator Building	Revision C
NH-36664	Residual Heat Removal Service Water & Emergency Service Water Systems	Revision BH
NH-36665	Service Water System and Make-up Intake Structure	Revision CE

Information Notices

84-65	Underrated Fuses Which May Adversely Affect Operation of Essential Electrical Equipment	August 16, 1984
88-45	Problems in Protective Relay and Circuit Breaker Coordination	July 7, 1988
89-87	Disabling of Emergency Diesel Generators By Their Neutral Ground-fault Protection Circuitry	December 19, 1989

Inspection Reports

50-263/87-09	Special Safety Inspection	July 20, 1987
50-263/88-12	Routine Safety Inspection	July 29, 1988
50-263/88-17	Routine Safety Inspection	November 2, 1988
50-263/88-28	Enforcement Conference Report	January 12, 1989

Instrument Calibration Records

FIS-4224A	#11 Emergency Diesel Generator Emergency Service Water Low Flow Alarm
FIS-4224B	#12 Emergency Diesel Generator Emergency Service Water Low Flow Alarm
PS-10-101A	Drywell High Pressure Emergency Core Cooling System Initiate
PS-10-101B	Drywell High Pressure Emergency Core Cooling System Initiate
PS-10-101C	Drywell High Pressure Emergency Core Cooling System Initiate

Number	Title	Revision or Date
PS-10-101D	Drywell High Pressure Emergency Core Cooling System Initiate	
PS-2438	#11 Emergency Service Water Pump Low Pressure Alarm	
PS-2439	#12 Emergency Service Water Pump Low Pressure Alarm	
PS-4112	#12 Emergency Service Water Pump Low Pressure Alarm	
TS-7216	#11 Emergency Diesel Generator Engine High Water Temperature Alarm	
TS-7217	#12 Emergency Diesel Generator Engine High Water Temperature Alarm	

Miscellaneous

2030	Control Room Log	Revision 58
EPRI TR-100516	Equipment Qualification Reference Manual	June 15, 1905
ESM-01.02	Design Practices	Revision 6
EWI-08.04.05	Pipe Thinning and Fouling Program (GL 89-13)	Revision 5
II.SME.95.001	Monticello Other IPEEE - Tornado Missile Assessment	Revision 0
315-2000-003	Licensee Event Report: Inadequate Protection of Electrical Switchgear Ventilation Structures from Tornado Hazards at the D. C. Cook Plant	June 12, 2000
346-2002-006	Licensee Event Report: Davis Besse Emergency Diesel Generator Exhaust Piping Not Adequately Protected From Potential Tornado Generated Missiles	November 5, 2002
List	Condition Reports Related to the Design Change Process	January 14, 2003
List	Condition Reports Related to Engineering Assessments	January 14, 2003
List	Condition Reports Related to Quality of Engineering	January 14, 2003
List	Condition Reports Related to 10 CFR 50.59 Process	January 14, 2003
MRE 122	Material Requirement Evaluation for Swagelok Components	April 3, 2001
PT0912CQ	Blanket Purchase Order for Swagelok Components	March 22, 2001
Strategy A.3-15-E	Diesel Oil Pump House Fire Response Strategy	June 25, 1999

Modifications (Design Change Notices)

75M001	Emergency Diesel Generator Lube Oil Filter Vent and Oil Sample Valve	February 12, 1975
76M021	Diesel Oil Tank Fill Pipe Extension	April 20, 1976

Number	Title	Revision or Date
76M069	Diesel Generator NVR "Not AUTO" Relay Replacement	Revision 1
78M063	Conversion of Heating Boiler and Diesel Day Tank Manholes to Emergency Vents	September 12, 1978
78M082	Heating Boiler Fuel Oil Temporary Piping	November 17, 1978
80M039	Diesel Generator Alarm Circuit Modification	March 21, 1980
84M057	Auto Fast Start Logic Modification to #11 and #12 Emergency Standby Diesel Generators	April 15, 1985
90Z038	Rewire Diesel Engine Panels C93 & C94	Revision 0
92Q000	Emergency Diesel Generator Emergency Venting / Mechanical Upgrades	Revision 0
92Q600	Moving Source of Emergency Service Water Pump	January 7, 1993
94Q030	Control Room Annunciator Upgrade	Revision 0

Operability Evaluations

02006048	Operability Determination for Insufficient Thread Engagement on the Expansion Joint Flange Connections Downstream of #11 and #12 Emergency Diesel Generator Emergency Service Water Heat Exchanger Outlets	July 2, 2002

Operations Manual

B.8.1.2	Emergency Diesel Generator Essential Service Water	
B.8.1.2.01	Function and General Description of System	Revision 6
B.8.1.2.02	Description of Equipment	Revision 1
B.8.1.2.03	Instrumentation and Controls	Revision 6
B.8.1.2.05	System Operation	Revision 7
B.8.7	Heating and Ventilating	
B.8.7.01	Function and General Description of System	Revision 4
B.8.7.02	Description of Equipment (Pages 58 & 59)	Revision 17
B.8.7.03	Instrumentation and Controls	Revision 11
B.8.7.05.01	Operational Requirements, Valve List, Power Supply List	Revision 7
B.8.7.05.02	Startup Procedures, Operating Procedures, and Shutdown Procedures	Revision 7
B.8.7.05.03	Special Procedures	Revision 9
B.8.7.05.04	Abnormal Procedures	Revision 4
B.8.11	Diesel Oil System	
B.8.11.01	Function and General Description of System	Revision 1

Number	Title	Revision or Date
B.8.11.02	Description of Equipment	Revision 4
B.8.11.03	Instrumentation and Controls	Revision 6
B.8.11.05	System Operation	Revision 11
B.9.8	Emergency Diesel Generators	
B.9.8.01	Function and General Description of System	Revision 3
B.9.8.02	Description of Equipment	Revision 2
B.9.8.03	Instrumentation and Controls	Revision 7
B.9.8.05	System Operation	Revision 13

Procedures		
C.4 - B.08.07.A	Ventilation System Failure Abnormal Procedure	Revision 16
C.4 - H	Restoration of Plant Loads Abnormal Procedure	Revision 6
C.6-008-B-33	#11 Diesel Generator Ground-8-B-3 Alarm Response Procedure	Revision 1
C.6-020-A-27	Standby Diesel Generator Supply Fan No Flow Alarm Response Procedure	October 14, 1999
C.6-093-A-01	Oil Pressure Alarm Response Procedure	Revision 1
C.6-093-A-02	Crankcase Pressure Alarm Response Procedure	Revision 1
C.6-093-A-03	Low Water Alarm Response Procedure	Revision 2
C.6-093-A-04	Circuit Alarm Response Procedure	Revision 1
C.6-093-A-05	No Field Alarm Response Procedure	Revision 1
C.6-093-A-06	Generator Breaker Alarm Response Procedure	Revision 1
C.6-093-A-07	Air Pressure Alarm Response Procedure	Revision 2
C.6-093-A-09	Fuel Transfer Alarm Response Procedure	Revision 1
C.6-093-A-13	Hot Engine Alarm Response Procedure	
C.6-093-A-16	Start Failure Alarm Response Procedure	Revision 1
0030	Emergency Core Cooling System High Drywell Pressure Sensor	Revision 11
0036-01	Emergency Core Cooling System Emergency Bus Under Voltage Test and Emergency Core Cooling System Loss of Normal Auxiliary Power Test	Revision 20
0036-02	Emergency Core Cooling System Automatic Initiation Test, Including Loss of Auxiliary Power	Revision 21
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests	Revision 41
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests	Revision 41
0189-2	Emergency Diesel Generator Simulated Automatic Initiation	Revision 14

Number	Title	Revision or Date
0304-01	Safeguard Bus Loss of Voltage Protection Relay Unit Calibration-Safeguards Bus 15	Revision 6
4100-01-OCD	11 Emergency Diesel Generator 1 Starting System	Revisions 6 & 7
4100-02-OCD	11 Emergency Diesel Generator 2 Starting System	Revision 6
4100-03-OCD	12 Emergency Diesel Generator 1 Starting System	Revision 7
4100-04-OCD	12 Emergency Diesel Generator 2 Starting System	Revision 7
4850-502-PM	152-502, 11 Emergency Diesel Generator to Bus 15 Relay Maintenance Calibration, and Test Tripping	Revision 2
4858-PM	4 Kilovolt General Electric, AMH Magne-Blast Circuit Breaker Maintenance	Revision 17
7180	Diesel Generator System Instrument Maintenance Procedure	April 12, 2002
8285	Non-Identical Fuse Replacement	Revision 3
References		
23718	Bechtel Power Corporation Letter - Standby Diesel Generator Rooms Heating, Ventilation and Air-Conditioning	May 9, 1984
5828/6453-M-118	Specification for Heating, Ventilating and Air Conditioning Systems and Controls - Design Operating Temperatures (Bechtel Specification, Section 4.0)	Revision 14
EQ-05-019	Barksdale Catalog Bulletin 730701-1 Pressure Switches (DI 0840-002-1203)	June 5, 1905
EQ-PART-B	Environment Qualification Central File, Part B Environmental Specifications	Revision 5
ESM-INDEX	Engineering Standards Manual	Revision 14
EWI-08.11.01	Equipment Qualification User's Manual	Revision 6
GE-NE-901-021-0492	Setpoint Calculation Guidelines for the Monticello Nuclear Generating Plant (General Electric Proprietary Information)	October 1992
NEDC-31336P-A	General Electric Instrument Setpoint Methodology (General Electric Proprietary Information)	September 1996
NRC SER	Revision to Safety Evaluation Report on NEDC-31366, Instrument Setpoint Methodology	November 6, 1995
Safety Review Items		
88-022	Special Test to Determine Diesel Generator Room Heat-Up Rate with the Outside Air Louvers Closed	April 27, 1989
90-029	Justification for Opening in Emergency Diesel Generator Ventilation Ducts Due to Installation of I-Beam Monorail	Revision 0

Number	Title	Revision or Date
90-034	Acceptability of Changing the Normal Position of SW-239-1 and SW-239-2 from Normally Open to Normally Closed	August 20, 1992
90-037	Acceptability of Diesel Fuel Oil Transfer House as Class II Structure Housing Safety Related Class I Equipment	Revision 0
91-010	Updated Safety Analysis Report Update Concerning Diesel Oil Day Tank	Revision 0
91-027	Emergency Diesel Generator Fuel Oil System Inconsistent with National Fire Protection Association Codes, Contrary to Updated Safety Analysis Report Statements	Revision 0
91-034	Clarification of Diesel Oil Transfer System Redundancy Criteria	Revision 0
00-013	Minimum Allowable Fuel Oil Storage Tank Level Addendum 1	Revision 0

Surveillances (Date Shown Is Date Surveillance Was Completed)

0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 35	January 14, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 35	February 12, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 36	March 18, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 36	April 15, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 36	May 13, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 36	June 17, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 36	July 15, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 36	August 12, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 36	September 16, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 36	October 15, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 37	November 18, 2001
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 37	December 16, 2001

Number	Title	Revision or Date
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 38	January 13, 2002
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 38	February 10, 2002
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 38	March 17, 2002
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 38	April 15, 2002
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 38	May 11, 2002
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 39	June 16, 2002
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 39	July 1, 2002
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 40	August 11, 2002
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 41	September 15, 2002
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 41	October 13, 2002
0187-01	#11 Emergency Diesel Generator/ #11 Emergency Service Water Pump System Tests, Revision 41	November 10, 2002
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 34	December 31, 2000
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 34	January 28, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 34	February 12, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 34	February 25, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 34	March 7, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 35	April 1, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 36	May 3, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 36	May 27, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 36	July 1, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 36	July 28, 2001

Number	Title	Revision or Date
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 36	August 26, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 37	September 30, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 37	October 27, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 37	December 2, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 38	December 30, 2001
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 38	January 27, 2002
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 38	March 31, 2002
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 38	April 28, 2002
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 38	May 1, 2002
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 38	May 26, 2002
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 38	July 2, 2002
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 39	July 28, 2002
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 39	August 25, 2002
0187-02	#12 Emergency Diesel Generator/ #12 Emergency Service Water Pump System Tests, Revision 41	October 27, 2002
1404-01	Emergency Diesel Generator Emergency Service Water Heat Exchanger Performance Test	July 17, 2000
1404-01	Emergency Diesel Generator Emergency Service Water Heat Exchanger Performance Test	July 25, 2001
1404-01	Emergency Diesel Generator Emergency Service Water Heat Exchanger Performance Test	August 19, 2002

System Health Reports

DGN	Emergency Diesel Generators	4th quarter 2002
DOL	Diesel Fuel Oil	4th quarter 2002
ESW	Emergency Diesel Generator - Emergency Service Water	4th quarter 2002
HTV	Heating and Ventilation	4th quarter 2002

Number	Title	Revision or Date
Technical Manuals		
NX-8974-18-2	General Electric Magne-Blast Circuit Breaker Specification	April 2, 1969
NX-9216-7	999 System Generating Plant	Revision 14
NX-9216-9	Turbocharged Engine Maintenance Manual	Revision 15
NX-16807	Automatic Tank Gage Model 92007	November 3, 1987
NX-17496-3	Protective Relay Cards - 4KV 151/DG1, 12IAC77A12A; 159N/DG1, 12IAV51D1A; 151V/DG1, 12IJCV51A13A; 167/502, 12ICW52A1A;155/502, 12ICW51A4A; 187/DG1, 12IJD52A11A	Revision 2
Work Order		
0306186	#12 Emergency Diesel Generator Oil Pump Is Leaking Oil	February 3, 2003

LIST OF ACRONYMS USED

ADAMS	Agency-wide Document Access and Management System
ANSI	American Nuclear Standards Institute
CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
EQ	Environmental Qualification
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records System
SDP	Significance Determination Process
URI	Unresolved Item