November 3, 2002

Mr. John L. Skolds, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, Illinois 60555

SUBJECT: LASALLE COUNTY STATION
NRC INSPECTION REPORT 50-373/02-11(DRS);50-374/02-11(DRS)

Dear Mr. Skolds:

On September 27, 2002, the NRC completed an inspection at your LaSalle County Station, Units 1 and 2. The enclosed report documents the inspection findings, which were discussed on September 27, 2002, with Mr. G. Barnes 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 reviewed a sample of permanent plant modifications and changes made under 10 CFR 50.59.

Based on the results of this inspection, the inspectors identified three issues of very low safety significance (Green) that 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 LaSalle County Station.

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Sincerely,

/RA/

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

Docket No. 50-373; 50-374
License No. NPF-11; NPF-18

Enclosure: Inspection Report 50-373/02-11(DRS);
50-374/02-11(DRS)

cc w/encl: Site Vice President - LaSalle County Station
LaSalle County Station Plant Manager
Regulatory Assurance Manager - LaSalle
Chief Operating Officer
Senior Vice President - Nuclear Services
Senior Vice President - Mid-West Regional Operating Group
Vice President - Mid-West Operations Support
Vice President - Licensing and Regulatory Affairs
Director Licensing - Mid-West Regional Operating Group
Manager Licensing - Clinton and LaSalle
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Illinois Department of Nuclear Safety
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Mechanical Engineering Branch
Division of Reactor Safety

Docket No. 50-373; 50-374
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M. Aguilar, Assistant Attorney General
Illinois Department of Nuclear Safety
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-373; 50-374
License No:	NPF-11; NPF 18
Report No:	50-373/02-11(DRS); 50-374/02-11(DRS)
Licensee:	Exelon Generation Company, LLC
Facility:	LaSalle County Station, Units 1 and 2
Location:	2601 N. 21st Road Marseilles, IL 61341
Dates:	September 9 through 27, 2002
Inspectors:	P. Lougheed, Engineering Inspector D. Chyu, Engineering Inspector G. Hausman, Engineering Inspector H. Walker, Engineering Inspector T. Bilik, Reactor Inspector, Trainee R. Echoles, Reactor Inspector, Trainee H. Anderson, Mechanical Contractor C. Baron, Mechanical Contractor
Approved by:	David E. Hills, Chief Mechanical Engineering Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000373/02-11(DRS), IR 05000374/02-11(DRS); Exelon Generation Company, LLC; on 09/09-27/02, LaSalle County Station; Units 1 & 2. 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 consultant assistance. The inspection identified three 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 (NCV) of 10 CFR Part 50, Appendix B, “Criterion III, Design Control,” that applied to the air start systems for all the emergency diesel generators on both units. Specifically, the inspectors identified that the design basis requirement that the starting air systems have enough air to permit either five (Division 1 and 2 diesel generators) or three (Division 3 diesel generators) normal starts in rapid succession was not translated into specifications, procedures, and instructions. As a result, there was no objective evidence that the required starting air system capacity was being maintained.

The finding was greater than minor based on the potential that degradation of the design basis capability of a starting air system would not be detected by the licensee. Degradation of the design function impacts the base probabilistic risk assessment values used for diesel generator reliability. The finding was of low safety significance because it does not represent an actual loss of the starting air system safety function. (Section 1R21.1)

Green. The inspection team identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, that applied to the fuel oil storage tanks for the high pressure core spray diesel generators on both units. Specifically, the inspectors identified that the licensee had incorrectly calculated the necessary volume for the fuel oil storage tanks.

The finding was greater than minor based on the number of deficiencies associated with the diesel generator fuel storage tank capacities requiring preparation of new calculations and corrections to existing calculations, the updated final safety analysis report, the technical specification bases, to procedures, and, possibly, to the technical specifications themselves. The finding was of low safety significance because it did not represent an actual loss of the high pressure core spray diesel generator fuel oil storage volume as currently required by technical

specifications. Furthermore, in the unlikely event that extended operation of the diesel generators was necessary, the licensee would likely be able to get fuel on site before the end of the seven day period. (Section 1R21.2)

Green. The inspection team identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, that applied to all the emergency diesel generators on both units. The test control valves on the diesel heads of all five emergency diesels were replaced by valves having a different form, fit, and function. The licensee did not ensure that the change was commensurate with the original design.

The finding was greater than minor because it involved the licensee failing to implement a required regulatory process. The finding was of low safety significance because of a warning currently in the licensee's procedure and the fact that the valves are only opened during surveillance. (Section 1R21.2)

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 twelve 10 CFR 50.59 evaluations and eleven 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)

Review of Recent Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed five permanent plant modifications that were performed by the licensee's engineering staff during the last two years, all but one of which affected the emergency diesel generators or their associated support systems. Therefore, review of the modifications counted for completion of activities under both NRC Inspection Procedures 71111, Attachments 17 and 21. 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 function. Calculations which were performed or revised to support the modifications were also reviewed. 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 final safety analysis report (UFSAR). 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 inspection was performed by a team of inspectors that consisted of a team leader, three Region III inspectors, and two mechanical consultants.

The systems selected for review during this inspection were 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 systems selected were the emergency diesel generators (including the high pressure core spray diesel), and their support systems: diesel generator cooling water, diesel fuel oil and diesel starting air.

The criteria used to determine the system’s performance included:

- applicable technical specifications;
- applicable UFSAR 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

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

Components

The common (0) diesel generator cooling water pump was selected for detailed review during the inspection. This component was specifically reviewed for component degradation due to the impact that its failure would have on the plant.

.1 System Requirements

a. Inspection Scope

The inspectors reviewed the updated final 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.

b. Findings

Introduction: Green. The inspectors identified a Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, "Criterion III Design Control," that applied to the air start systems for all of the emergency diesel-generators on both units. Specifically, the inspectors identified that the design bases for each of the Division 1, 2, and 3 emergency diesel-generator starting air systems were not translated into specifications, procedures, and instructions. As a result, there was no objective evidence that the required emergency diesel generator starting air system capacity was being maintained.

Discussion: The design basis for the air start system, as stated in the UFSAR and technical specification bases, is to have sufficient air to allow five normal starts in rapid succession (three starts for the high pressure core spray (HPCS) diesels) without use of the air compressors and with an initial air pressure of 200 psig. At the beginning of the inspection, the inspectors requested the calculations that sized the system. The licensee was not able to locate these analyses during the inspection, and determined that no calculations existed. The licensee stated the air start system was bought as a pre-specified unit and was tested during preoperational testing. The licensee provided copies of the preoperational tests which showed that the air start systems met the design basis at the time the plant was licensed. However, the inspectors noted several discrepancies between the preoperational and current conditions which could not be readily explained and which called into question the ability of the system to meet its design basis function.

The inspectors noted that, during the preoperational tests for Divisions 1 and 2, each bank of air experienced, on average, a 13 to 17 psig drop for the initial start. Recent Division 1 and 2 starts typically averaged an 18 to 22 psig drop. This would indicate that more air was being used per start and that the design basis might not be maintained. For Division 3, a similar increase from 25 to 30 psig during preoperational testing to 30 to 35 psig during current testing was observed. However, it was not possible to make a direct comparison between the data for two reasons:

(1) The preoperational tests were conducted using a single air bank while the tests at the time of the inspection used both banks (due to an unrelated abutment issue). The licensee provided some informal data, not regularly taken during the

surveillance testing, that showed that the cranking time for the air start system had decreased since the time of the preoperational tests. The inspectors agreed that the cranking times had slightly decreased over time, as would be expected with the change to dual bank starts. However, while this data could show that the air start system was still accelerating the engine to 150 rpm in the same (or less) time, it could not explain the increased air usage. Furthermore, because the data was not consistently taken, the inspectors did not believe that it could be credited for showing that the design basis was properly translated into procedures.

(2) The preoperational tests were conducted at 200 psig, while the current tests are conducted between 225 to 240 psig. Due to the licensee switching to starting on both air banks, the procedure requires the operators to drain the tanks down and allow them to refill if the tanks are more than five pounds off. This is done in order to ensure that both banks start at about the same pressure. Attempts, by both the inspectors and the licensee, to correlate the increased pressure drop to the increased starting air pressure were unsuccessful. The licensee prepared engineering change 338926; however after discussion with the inspectors, they withdrew it and planned to revise it.

Analysis: Evaluation of this issue concluded that it is a design control deficiency resulting in a finding of very low safety significance (Green). The design control deficiency is due to the licensee neither having design calculations available that documented the starting air system design requirements, nor having testing acceptance criteria which would show that the design basis capability of the air start system was being maintained. The mitigating systems cornerstone was affected due to the potential undetected degradation of the design basis capability of a starting air system, with the associated potential effect on the starting capability for the emergency diesel-generator and on equipment that would be powered by the emergency diesel-generator. No other cornerstones were determined to be degraded as a result of this issue.

This finding was determined to be greater than minor based on the potential that degradation of the design basis capability of a starting air system would not currently be detected by the licensee. The design basis capability of the emergency diesel-generator starting air system was based on the capability to provide five (three) fast starts in rapid succession without the use of the starting air system compressor, with a minimum air receiver pressure of 200 psig. Degradation of the design function impacts the base probalistic risk assessment values used for diesel generator reliability.

This finding was assessed as Green because it does not represent an actual loss of the starting air system safety function. Surveillance testing from preoperational/start-up tests to the most recent fast starts has demonstrated the current operability of the diesel generators to start within the required 13 seconds. Therefore, this issue was screened out of the significance determination process as 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 September 27, 2002, the design basis for the emergency diesel-generator starting air systems was not correctly translated into plant documents, in that design calculations were not available and acceptance criteria were not included in surveillance and testing procedures to verify that the starting air system design basis capability was maintained. The licensee initiated condition report 124743 to address this issue.

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 50/373-2002-011-01; 50/374-2002-011-01).

.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. Additionally, the inspectors attended a simulator walk-through for selected diesel generator loading sequences.

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. Pre-operational test data was also reviewed to confirm initial design parameters that could not be tested under normal operations.

b. Findings

.1 Introduction: Green. The inspectors identified a second NCV of Criterion III that applied to the fuel oil storage tanks for the HPCS diesel generators on both units. Specifically, the inspectors identified that the licensee had incorrectly calculated the necessary volume for the fuel oil storage tanks.

Description: Per the UFSAR, Section 9.5.4.2, the licensee is committed to American National Standard Institute (ANSI) N195-1976, "Fuel Oil Systems for Standby Diesel-Generators," Section 5 (System Performance Requirements), Subsection 5.4 (Calculation of Fuel Oil Storage Requirements). Subsection 5.4 requires licensees to calculate the total fuel storage requirements based on calculating the expected time dependent loads, plus a ten percent margin. The standard also provides a conservative alternative for calculating the storage capacity by assuming that the diesel operates continuously for seven days at its rated capacity.

For the Division 1 and 2 diesel generator fuel oil storage tanks, the licensee chose to calculate the storage capacity by assuming that the diesels operated continuously at their rated capacities. For the Division 3 diesels, the licensee chose to determine a time-dependent load and to calculate the tank capacity on that basis.

The inspectors noted a number of problems associated with fuel oil storage tank and fuel consumption calculations. For example, the inspectors identified that the values in calculation DO-14 were based on a presumption that the HPCS pump would go to runout after a day and would remain in that condition. Furthermore, the calculation did not take into account the ten percent margin required by the ANSI standard.

Additional problems noted were:

- Calculation DO-7 appeared to have been superceded, at least in part, by calculations DO-11 and DO-14. However this wasn't recognized in any fashion.
- Similarly, calculation DO-8 was partially superceded by DO-13 and DO-15.
- Technical Specification 3.8.1.4 was non-conservative in relation to the design basis as described in calculation DO-15. The licensee concluded there was no operability problem as the tanks were always maintained above the low level setpoint and the DO-15 calculations were determined to be overly conservative.
- Procedure LOP-DO-02 contained errors related to incorrect diesel fuel oil transfer pump auto trip and auto start volume levels.
- There were no calculations to support the tables converting tank height in inches of water to gallon of fuel oil. These tables were posted on the doors of each day tank room and were included in procedures LOP-DO-01 and LOP-DO-02.
- UFSAR Table 8.3-1 had not been revised to correctly reflect the values in design calculation 4266/19AK19. In addition, the licensee did not have a calculation for the scenario of a loss of coolant accident on Unit 2 with a shutdown on Unit 1, even though that would result in a different loading on the 0 diesel generator than the case analyzed in 4266/19AK19.
- The loading calculated in 4266/19AK19 was 2717 kilowatts, which was well above the continuous loading of 2660 kilowatts, although within the 2000 hour loading. Procedure LOA-AP-101 did not contain any restrictions on loading the diesel generators, which negated the conservatism assumed in ANSI N-195.

Analysis: Evaluation of this issue concluded that it is a design control deficiency resulting in a finding of very low safety significance (Green). The design control deficiency existed in that the licensee had not included the ANSI N-195 minimum margin of ten percent above the load profile results in the design calculations and subsequently had not translated adequate design basis requirements into specifications, procedures, and instructions to meet the licensee's UFSAR commitment. The mitigating systems cornerstone was affected due to the failure to include adequate margin in the design basis minimum storage requirements for the HPCS emergency diesel generator fuel oil storage volume, with the associated potential effect of the inability of the storage volume to supply operation of each HPCS emergency diesel generator for the full seven day interval at the assumed loadings. This potential effect would impact the emergency diesel generator as well as the equipment that it would power during the seven day design interval. No other cornerstones were determined to be degraded as a result of this issue. Degradation of the design function impacts the base probalistic risk assessment values used for diesel generator reliability.

This finding was determined to be greater than minor based on the number of deficiencies associated with the diesel generator fuel storage tank capacities. These deficiencies will require preparation of new calculations, corrections to existing calculations, the UFSAR, the technical specification bases, and to procedures. Changes to the technical specifications themselves may also be required. Therefore the criteria for a more than minor violation of design control was deemed to be met.

This finding was assessed as Green because it did not represent an actual loss of the HPCS diesel generator fuel oil storage volume as required by technical specifications. Furthermore, the inspectors recognized that, in the unlikely event that extended operation of the diesel generators was necessary, the licensee would be able to get fuel on site before the end of the seven day period.

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, the licensee had not included the ANSI N-195 minimum margin in the design calculations of minimum HPCS emergency diesel generator fuel oil storage volume and subsequently had not translated adequate design basis requirements into specifications, procedures, and instructions to meet the licensee's FSAR commitment. The licensee initiated condition reports for each of the above problems during the inspection to address associated problems. A complete list of condition reports can be found in the list of documents at the end of the report.

Because of the very low safety significance of this issue and because the issues have been entered into the licensee's corrective action program, the finding is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50/373-2002-011-02; 50/374-2002-011-02). This issue was determined to be sufficiently different from the issue on the air start system system such that it should be considered a separate violation rather than a separate example of a violation.

2. Introduction: Green. The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III that applied to all of the emergency diesel generators on both units. The licensee replaced the vent control valves on the diesel generator heads with valves having different form, fit and function and did not apply a design control process commensurate to the original design.

Discussion: During a walkdown of the emergency diesel generators, the inspectors noted pressure test connection valves on the diesel cylinder heads that appeared different from the original. The licensee confirmed that the valves had been modified so the inspectors requested copies of the design change documents used for the installation of the equipment. The licensee responded that the valves were installed using the alternate parts replacement program. After some discussion, copies of the alternate parts replacement records and appropriate procedures were obtained.

During visual examination of the old and new valves, review of the alternate parts evaluation and review of the current surveillance procedure, the inspectors determined that the old and new valves had substantial differences and actually performed different functions. Therefore, the use of the alternate parts evaluation, where the part was assumed to have the same basic "form, fit, and function," was not appropriate.

The inspectors noted that the original needle valve stem had to be completely removed to allow connection of test equipment. Once testing was completed, the test

connections had to be removed, the valve stem installed and hand tightened in a clockwise direction to prevent flow. The replacement required an adapter for installation into the head. The valve then fitted onto the top of the adaptor and functioned as most valves, where the stems are not removed during operation. Instead a handwheel was turned to rotate the valve disc off its seat and allow flow to the test equipment, which could remain connected no matter the position of the valve. Another important difference introduced by this change in valve design was that the stem was required to be rotated clockwise for opening and counter clockwise for closing. This was different, not only from the original design, but also from the opening and closing of most valves.

Based on the documents reviewed, the inspectors concluded that a type of failure, not previously identified (i.e., ejection of the valve adapters), could have occurred with this type replacement valve. During discussions, licensee personnel stated that such an incident had occurred around 1998 at another plant where a cylinder test valve adapter was ejected from a diesel resulting in the inoperability of the diesel. The information had been distributed as industry experience type information. As a result of the industry experience notification, the licensee revised its procedures to add a warning to ensure that the valves were not over tightened.

Analysis: Evaluation of this issue concluded that it was a design control deficiency resulting in a finding of very low safety significance. The design control deficiency was due to the licensee having failed to control the design modification process to the same degree as the original design. Because the licensee installed the new valves as an alternate parts replacement, a 10 CFR 50.59 screening or evaluation was not performed and drawings and procedures were not updated.

Because the licensee identified the potential for a new failure mode associated with this modification (as evidenced by warning in the surveillance procedures), the inspectors reviewed the issue against the requirements of 10 CFR 50.59 and discussed this issue with the cognizant individual in the Office of Nuclear Reactor Regulation for issues regarding 10 CFR 50.59. In either 1994 or 1998, the wording of 10 CFR 50.59 would have required the licensee to have submitted the modification for NRC review and approval, presuming the licensee had recognized at that time that a different failure mode had been introduced into the system.

However, in March 2001, a revised version of 10 CFR 50.59 took effect. The revised version permits changes to be made that introduce new failure modes, as long as those new failure modes do not result in "more than a minimal increase in the likelihood of a malfunction of equipment important to safety." Based upon the current warning in the licensee's procedure and the fact that the valves are only opened during surveillances, the inspectors concluded that the modification would not result in more than a minimal increase and that the issue did not require further NRC review.

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. It further states that design changes shall be subject to design control measures commensurate with those applied to the original design.

Contrary to the above, in December 1994, when the new valves were installed, the licensee did not apply the design change process commensurate with the original design in that they did not perform a 10 CFR 50.59 screening or evaluation nor did they update operating procedures or drawings. This led to a potential new failure mode not being evaluated properly. Because the issue involved a failure to implement a required regulatory process, application of the significance determination process was not appropriate. However, after consultation with NRC management, it was determined that the issue was of very low risk significance and should be assigned a color of "Green."

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 50/373-2002-011-03; 50/374-2002-011-03). The licensee entered this into their corrective action program as condition report 124850.

.3 Components

a. Inspection Scope

The inspectors examined the 0 diesel generator cooling water pump to ensure that component level attributes were satisfied. The attribute selected for review was component degradation, due to the impact that the pump's failure could have on the diesel generator.

Component Degradation: This attribute was verified through review of component repair histories and review of corrective action documents. The inspectors reviewed the attribute to verify the licensee was appropriately maintaining components in the emergency diesel generators and associated support systems

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA2 Identification and Resolution of Problems

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.

4OA6 Meetings

Exit Meeting

The inspectors presented the inspection results to Mr. G. Barnes, and other members of licensee management, on September 27, 2002. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

KEY POINTS OF CONTACT

Licensee Management
G. Barnes, Site Vice President
R. Chrzownski, Engineering
R. Cockrel, Engineering
T. Conner, Design Engineering Manager.
D. Czufin, Site Engineering Director
D. Enright, Operations Manager
T. Dao, Engineering
F. Gogliotti, Plant Engineering Manager.
P. Holland, RA
G. Kaegi, RA Manager
T. Lanc, Engineering
S. Landahl, Assistant Plant Manager
W. McDonald, Design Engineering
J. Shields, Design Engineering
S. Stiles, NO Manager
T. Simpkin, Cantera Licensing
J. Drawley, Cantera Engineering

Response Team Members
W. Cockrel, Diesel System Engineer
T. Dao, Diesel Generator Cooling Water System Engineer
B. Davenport, Mechanical Contact
P. Holland, Regulatory Assurance Contact
W. McDonald, Response Team Leader
E. Seckinger, Electrical Contact
V. Shah, I&C Contact
S. Smalley, Ventilation System Engineer
J. Wieging, Operations Contact

NRC
B. Burgess, Chief, Branch 4, Division of Reactor Projects
E. Duncan, Senior Resident Inspector
D. Eskins, Reactor Engineer
Z. Falevits, Acting Chief, Electrical Engineering Branch, Division of Reactor Safety

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

50-373/02-04-01; 50-374/02-04-01	NCV	Failure to Translate Design Criteria for Five Normal Starts on Air Start System into Either Calculation or Test Acceptance Criteria
50-373/02-04-02; 50-374/02-04-02	NCV	Failure to Incorporate Required Design Margin in Calculating Required Capacity of HPCS Diesel Fuel Oil Storage Tanks
50-373/02-04-03; 50-374/02-04-03	NCV	Failure to Use Proper Design Control Process When Modifying Diesel Test Control Valves

Discussed

None

LIST OF ACRONYMS USED

ADAMS	Agency-wide Document Access and Management System
ANSI	American National Standards Institute
CFR	Code of Federal Regulations
CSCS	Core Standby Coolant System
DRS	Division of Reactor Safety
HPCS	High Pressure Core Spray
NEI	Nuclear Energy Institute
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records System
PSIG	Pounds Per Square Inch Gauge
RPM	Revolutions Per Minute
SDP	Significance Determination Process
UFSAR	Updated Final Safety Analysis Report

LIST OF DOCUMENTS REVIEWED

1R02 Changes, Tests and Experiments

Number	Title	Revision/ Date
Condition Reports Reviewed During the Inspection		
L2000-05979	Nuclear Safety Review Board Subcommittee Identified Need to Revise 10 CFR 50.59 Safety Evaluation	October 24, 2000
L2001-00347	Engineering Rework of Backlog Drawing Incorporation	January 19, 2001
L2001-00953	Engineering Assessment of Design Change Package 9500452 10 CFR 50.59 Evaluation	February 15, 2001
10 CFR 50.59 Evaluations		
L00-0886	Replace Existing Residual Heat Removal Service Water Sample Pumps with New for the Process Radiation Detector	Revision 2
L01-0103	Update UFSAR Section 5.2.2.4.2.1 Design Pressure and Temperature Downstream from the Crosby Main Steam Safety-Relief Valves to 625 psig and 500°F	July 11, 2000
L01-0214	Update UFSAR Discussion Regarding Moderate Energy Line Breaks	July 11, 2000
L01-0227	Temporary Modification to Install an Alternate Method of Determining Drywell Floor Drain Sump Flow Rates	Revision 1
L01-0254	Revise UFSAR Section 3.8.4.1.3 to Correct Errors and Clarify Information	July 11, 2000
L01-0265	Remove Locking Devices to Allow Backdraft Damper to Operate as Required for High Energy Line Break Outside Containment	Revision 0
L01-0282	Replacement of Centrifugal Residual Heat Removal Service Water Process Radiation Pumps	Revision 2
L01-0612	Installation of 345 Kilovolt Revenue-Grade Metering	Revision 0
L01-0658	Jet Pump Vibration Fatigue Analysis	Revision 0
L02-0182	Increased Cooling Water Temperature Evaluation to a New Maximum Allowable of 104° F	May 14, 2002
47478	Modification of Valves 1(2)DG036	August 5, 1992
9600195	Division 2 Residual Heat Removal Service Water Keepfill	October 30, 1996
10 CFR 50.59 Screenings		
L00-1288	Defeat Diesel Generator Governor Auto Reset Feature	October 31, 2000
L01-0265	Remove Locking Devices to Allow Backdraft Damper to Operate as Required for High Energy Line Break Outside Containment	Revision 0
L01-0712	Restore Original Flow Instrumentation and Disconnect Temporary Modification	Revision 0
L02-0074	Instrument/Tubing Replacement for 1PI-DG122	Revision 0
L02-0206	Revision to Procedure LOP-AP-29 to Allow The Removal of Cubicle Fuses Under No Load	Revision 0
L02-0235	Revision to Procedure LOS-HP-Q1 to Add a Step to the HPCS System Inservice Test Procedure	Revision 0

Number	Title	Revision/ Date
L02-0256	Temporary Change to Bypass a Degraded Cell by Adding a Temporary Cell in Unit 2 Division 2 125 Volt DC Battery	Revision 0
L02-0278	New Procedure LOA-UHS-001 Loss of Ultimate Heat Sink	Revision 0
L02-0316	Temporary Configuration Change to Remove the Disc from Valve 0DG005	September 6, 2002
510943	Modify 2A Diesel Generator Exhaust Expansion Joint Bolting/ Holes for Proper Alignment	February 23, 1999
49854	Increase the Thermal Overload Relay Setpoint for Various VD and VY Fan Motors	March 16, 1996

1R17 Permanent Plant Modifications

Modifications

331943*	Install Wire Mesh Frame Assemblies to Diesel Generator Exhaust Parapets on South Side of Diesel Generator Building	Revision 0
333905	Jet Pump Vibration Fatigue Analysis	Revision 0
334017*	Increase Cooling Water Temperature Evaluation to a New Maximum Allowable of 104° F	Revision 0
334146*	1PI-DG-122 Diesel Generator Crankcase Pressure Indicator	Revision 1
334569*	0DG-ST-11 Line Replacement	Revision 0

* Documents also reviewed for Attachment 1R21. Associated documents (calculations, drawings, surveillances) are listed under that attachment.

1R21 Safety System Design and Performance Capability

Alternate Parts Replacements

L-94-0134	Alternate Parts Replacement Form for Replacement of the Cylinder Test Needle Valve with a V-line Indicator Valve	November 23, 1994
Q-93-099-21	Alternate Parts Replacement Form for Valve Indicator Adapter	March 30, 1994

Calculations

015521(EMD)	Reevaluate HPCS Oil Storage Tank Specification – Auxiliary Building	October 23, 1978
020955(EMD)	Minimum Wall Evaluation for Line 1DG018A in Subsystem 1CS-64	Revision 3B
23DO-2	Typical Arrangement of Fuel Oil Tank Piping	April 21, 1975
23DO-4	Calculation of Fuel Oil Needed to Meet Seven Day Requirement on Diesel Fuel Oil Tank	April 21, 1975
23DO-5	Hydrostatic Test Pressure and Temperature for Diesel Fuel Oil Transfer Pumps	April 21, 1975
23DO-6	Elevation of Diesel Fuel Oil Day Tanks	April 21, 1975
23DO-7	Diesel Oil Storage Capacity	April 7, 1976
23DO-8	Diesel Oil Instrument Setpoints	August 1, 1977
23DO-9	Diesel Fuel Transfer Pump Net Positive Suction Head	December 9, 1976
23DO-10	Diesel Oil Orifice Sizing	December 9, 1976

Number	Title	Revision/ Date
23DO-11	Diesel Oil Storage and Day Tanks Available Capacity – HPCS Diesel	08/ /89
23DO-12	HPCS Diesel Generator Day Tank Fuel Level for Running Diesel Generator 50 minutes	10/ /90
23DO-13	HPCS Diesel Generator Fuel Oil Transfer Pump Start Switch Instrument Setpoint	06/ /91
23DO-14	HPCS Diesel Fuel Storage Capacity Margin	March 14, 1990
23DO-15	Division 1 and 2 Diesel Generator Fuel Oil Day Tank Instrument Setpoints	April 3, 1990
4266/19AK15	Input Kilowatt Loading on 4160 Volt Switchgear 143 and 243	January 23, 1992
4266/19AK19	Input Kilowatt Loading on 4160 Switchgear 141Y, 142Y and 242Y	June 30, 1997
4266/19AN14	Replacement of Diesel Generator 0 Cooling Water Pump Motor 0DG01P	October 31, 1988
4266/19AN71	Second Level Undervoltage Relay Setpoint	December 20, 2001
4266/19AZ21	Diesel Generator 0 Modified Feeder Breakers Closing Circuits	January 24, 1992
4266/19AZ30	Degraded Voltage with a 2.5 Percent Boost at the Division 1 and 2 Unit Substation Transformers	August 17, 1999
4266/19AZ31	Degraded Voltage with a 2.5 Percent Boost at the Division 1 and 2 Unit Substation Transformers	August 6, 1992
4266/19D50	Division 1, 2 and 3 125 Volt DC Switchgear Breaker Control Voltage Adequacy	April 9, 1997
4266/19D55	Terminal Voltage for the Replacement of Diesel Generator 2B Fuel Priming Pump Motor During Start and Run	September 22, 1994
97-195	Thermal Model of ComEd – LaSalle Station Diesel Generator Jacket Water Coolers	May 14, 2002
97-197	Thermal Model of ComEd – LaSalle Station HPCS Diesel Generator Coolers	May 14, 2002
ATD-0135	Change in Diesel Generator Cooling Water Flow to Low Pressure Core Spray Motor Cooler Due to Check Valve Removal	May 22, 1992
CID-DO-02	Diesel Generator Day Tank Level Switches Instrument Margin	March 28, 1990
CID-DO-01	HPCS Diesel Fuel Oil Day Tank Low Level Setpoint	October 8, 1990
DG-07	Check Valve Flow Conditions for Diesel Generator System	August 6, 1987
DG-08	Net Positive Suction Head for HPCS Diesel Generator Fuel Pumps	October 11, 1990
DG-12	Evaluation of Available Net Positive Suction Head as a Result of Relocating Diesel Generator 2B Fuel Oil Priming Pump	September 6, 1994
DG-1	Diesel Generator Exhaust System Backpressure	December 14, 1976
DG-4	Diesel Generator Intake Pressure Losses	December 14, 1976
EQ-05	Temp and Humidity Profile for Reactor Building	May 1, 1987
EQ-07	Temperature and Humidity Profile Diesel Generator Rooms and HPCS Rooms	May 8, 1981
L-000295	Analysis of Safety-Related Loads During Loss of Coolant Accident Block Start for LaSalle Unit 2	March 14, 2002
L-000432	Justification for Eliminating Check Valves 0,1,2DG002 and 1(2)E22-F028	June 5, 1996

Number	Title	Revision/ Date
L-000547	CSCS Pumps Suction Piping Volume, Flow Velocity Rates, and Turnover Time for Suction Piping	July 2, 1996
L-000560	Pressure Drop from External Source to the Diesel Generator Heat Exchangers Through the Fire Protection System	June 30, 1996
L-000679	Determination of Flow Correction Factors for Evaluating the Performance of CSCS Equipment Cooling Service Water Pump Operation	Revision 1
L-000738	Orifice Sizing for Residual Heat Removal Service Water Keep Fill Line	Revision 0
L-001007	Evaluation for Required Minimum Thickness for Channel Covers of Heat Exchangers 1DG01A and 0DG01A	March 1, 1997
L-001168	Evaluation of 54 Inch CSCS Bypass Line	Revision 4
L-001333	Ventilation Flow Rate Requirements for the Diesel Generator Fuel Oil Day Tank and Storage Tank Rooms	September 27, 1997
L-001355	LaSalle County Station CSCS Hydraulic Model	May 16, 2002
L-001401	Determination of Velocities in CSCS Piping	December 12, 1997
L-001491	Effects of Outside Air Temperature Greater than 95°F System Performance	May 22, 1998
L-001821	Allowable Leakage for the Diesel Generator Air Start Subsystems	March 5, 1998
L-002211	2DG01A, 2A Emergency Diesel Generator Cooler Thermal Heat Transfer Performance	February 16, 1999
L-002255	HPCS Diesel Generator Cooling Water Pump Flow and Net Positive Suction Head Requirements	March 24, 1999
L-002389	Operability Evaluation of Subsystems 2CS63 and 2CS64 for ER9900504	January 29, 1999
L-002404	CSCS Cooling Water System Road Map Calculation	November 6, 2000
L-002533	Torque Values for the Diesel Oil Tanks	March 21, 2000
L-002684	Evaluation of 1B HPCS Emergency Diesel Generator Heat Exchanger Test	September 29, 2000
VD-1A	Standby Diesel Generator Room Ventilation System	July 07, 1976
VD-1B	Diesel Fuel Storage Tank Room and Diesel Oil Day Tank Room Ventilation System	July 07, 1976
VD-1C	Diesel Generator Room Ventilation System Duct Pressure Drops	October 02, 1978
VD-2A	Standby Diesel Generator Room Ventilation System	July 01, 1976
VD-2B	Diesel Fuel Storage Tank Room and Diesel Oil Day Tank Room Ventilation System	July 01, 1976
VD-2C	Diesel Generator Room Ventilation System Duct Pressure Drops	October 02, 1978
VD-3A	HPCS Diesel Generator Room Ventilation System	July 07, 1976
VD-3B	HPCS Diesel Generator Fuel Storage Tank Room and Diesel Oil Day Tank Room Ventilation System	July 07, 1976
VD-3C	HPCS Diesel Generator Cooling Water Pump, Switchgear and Battery Rooms – Ventilation System	July 29, 1991
VD-3D	HPCS Diesel Generator Room Ventilation System Duct Pressure Drops	October 03, 1978

Number	Title	Revision/ Date
VD-3E	Temperature and Relative Humidity versus Time Profile for HPCS Diesel Generator Rooms	November 12, 1980

Condition Reports Reviewed During the Inspection

L2000-00241	1A Diesel Generator Failure to Start	January 19, 2000
L2001-03989	Failure to Measure Cetane Level for Diesel Fuel Oil	July 10, 2001
035277	Action Taken to Stop 2A Diesel Generator after Inadvertent Start on September 13, 2000	September 22, 2000
043742	Amendment Request for Diesel Generator Allowed Outage Time Extension Not Timely	February 2, 2001
113823	0 Diesel Generator Oil Circulating Pump Trip	June 30, 2002
114125	1A Diesel Generator Cooling Water Flow Adjustment Required During LOS-DG-Q2	July 2, 2002
115477	Unable to Adjust 0A Diesel Fire Pump Engine Jacket Cooling Water Temperature below 200°F	July 10, 2002
120008	1VY02A As-Found Water Flow Lower than Surveillance Limit	August 20, 2002
120239	1B Diesel Generator Cooling Water Flow Discrepancy	August 22, 2002
120459	1A Diesel Generator Oil Circulating Pump Stopped Operating	August 24, 2002
121821	Apparent Stem-Disc Separation in 0DG005, Common Diesel Generator Cooling Water Valve	September 5, 2002
121907	0DO01P (0 Diesel Generator Fuel Oil Transfer Pump) Failure	September 6, 2002
121972	0 Diesel Generator Fuel Oil Transfer Pump Power Loss Repeat Failure	September 6, 2002
122009	LOP-DG-903 Surveillance Suspended	September 11, 2002
122320	Evaluate CSCS Service Water Components for Corrosion or Erosion	September 10, 2002
122377	0 Diesel Generator Maintenance Window Extended Due to Emergent Work	September 11, 2002
122495	UFSAR Figure 9.5-1 Incorrectly Identifies Division 1 Fuel Oil Storage Tank as the Division 3 Fuel Oil Storage Tank	September 13, 2002
122506	Link Calculation DO-08 to DO-15	September 13, 2002
122518	Enhance Procedures LOA-FX-101(201) for Diesel Generator Cooling Water	September 11, 2002
122520	Limiting Fuel Oil Specific Gravity	September 11, 2002
122522	American Petroleum Institute (API) Specific Gravity Checks	September 11, 2002
122525	Diesel Generator Load Rating	September 11, 2002

Condition Reports Written as a Result of the Inspection

122389	LOP-DG-02 Acceptance Criteria Is Non-conservative	September 13, 2002
122403	Sections of DO-7 Diesel Fuel Oil Tanks Capacity Calculation Should Have Been Superceded by DO-11	September 13, 2002
122413	Sections of DO-08 Diesel Fuel Oil Instrument Setpoint Calculation Should Have Been Superceded by DO-15	September 13, 2002

Number	Title	Revision/ Date
122504	UFSAR 8.3-1 Diesel Generator Maintenance Interval Ratings Are Incorrect	September 13, 2002
122561	Diesel Generator Training Material Error	September 13, 2002
122679	Drawing 1E-2-4026AA Fuel Oil Transfer Pump Relay – Relay Contact Errors	September 13, 2002
122688	Unit 2 Loading Analysis	September 13, 2002
122712	M2132 Diesel Fuel Oil Level – Configuration Control Drawing Errors	September 13, 2002
122784	Diesel Fuel Oil Drawing Discrepancy and Inappropriate Units of Measure	September 13, 2002
122799	M-85 and M-132 Drawing Errors Concerning Diesel Oil Tank Capacities	September 13, 2002
122818	High Alarm Setpoints for Level Switches Not Wired or Calibrated in the Plant – Configuration Control Problem	September 13, 2002
122888	UFSAR, Technical Specification Discrepancies with Diesel Oil Calculation DO-7	September 13, 2002
123096	Clarification Needed UFSAR 9.5.5.1.1	September 16, 2002
123359	Diesel Generator Load Limits in Procedures Are Confusing	September 20, 2002
123467	Calculation Should Be Classified as Historical	September 20, 2002
123527	Calculation DG-07 Should Be Classified as Historical	September 20, 2002
123846	UFSAR Discrepancy on Diesel Generator Ventilation Intake Location	September 20, 2002
123855	UFSAR Change Not Processed in Timely Manner	September 20, 2002
123875	Lack of Procedural Guidance on Diesel Generator Loading above 2600 Kilowatts and Fuel Oil Consumption	September 23, 2002
124123	0 Diesel Generator Loading in LTS-500-109 Is Incorrect	September 23, 2002
124125	Design Basis Initiative Provided Incorrect Verification and Validation Documents for Diesel Generator Air Storage Capacity	September 23, 2002
124137	Calculation L-1401 Should Be Historical	September 23, 2002
124142	Two Active Drawings Exist for Unit 1 and 2 HPCS Pump Performance Curves	September 23, 2002
124277	No Supporting Calculations for Correlating Diesel Fuel Day Tank Levels to Volume for Use on Station Placards and in Procedures LOP-DO-01 and LOP-DO-02 Tables	September 24, 2002
124338	U2 HPCS Pump Brake Horsepower Load in Calculation AK15 Is Incorrect	September 24, 2002
124503	UFSAR Figure 9.5-7 Needs to Be Revised to Show Only One Ventilation System Inlet Filter	September 25, 2002
124537	Incorrect Calculation Reference in Procedures	September 25, 2002
124542	Calculation VD-3D Uses Non-conservative Flow Rate	September 25, 2002
124650	LMS-DG-03 Precautions C.1 and C.1.1 Are No Longer Correct	September 26, 2002
124655	Diesel Generator Cooling Water Strainer Backwash Flow Acceptance Criteria Problems	September 26, 2002
124725	Acceptance Criterion Limits Non-conservative	September 26, 2002

Number	Title	Revision/ Date
124732	Technical Specifications For 50 Min Run Requires 250 Gallons; Calculation DO-15 Requires 254.18 Gallons	September 26, 2002
124738	Values on Pages 4 and 7 of Calculation DO-08 Do Not Match Procedure LOP-DO-02, Sections E.2 and E.3	September 26, 2002
124742	UFSAR Strainer Backwash Flow Low	September 26, 2002
124743	Limited Documentation to Demonstrate Five Start Criteria Is Met	September 26, 2002
124828	Diesel Generator Air Flow Regulator Calibration	September 27, 2002
124833	Division 2 Diesel Generator CSCS Strainer Backwash Flow	September 27, 2002
124850	Parts Evaluation for Kiene Valves May Have Overlooked New Failure Mode	September 27, 2002

Drawings

1E-0-4412AA	Schematic Diagram – 4160 Volt Switchgear 141Y Diesel Generator 0 Feed Active Circuit Breaker 1413	Revision AB
1E-0-4412AB	Schematic Diagram – 4160 Switchgear 241Y Diesel Generator 0 Feed Active Circuit Breaker 2413	Revision Z
1E-0-4412AC	Schematic Diagram – System	Revision X
1E-0-4412AD	Schematic Diagram – Diesel Cooling Water Strainer	Revision D
1E-0-4412AE	Schematic Diagram – Diesel Generator 0 Engine Control System	Revision T
1E-0-4412AF	Schematic Diagram – Diesel Generator 0 Engine Control System	Revision U
1E-0-4412AG	Schematic Diagram – Diesel Generator 0 Engine Control System	Revision V
1E-0-4412AH	Schematic Diagram – Diesel Generator 0 Engine Control System	Revision Q
1E-0-4412AJ	Schematic Diagram – Diesel Generator 0 Engine Control System	Revision V
1E-0-4412AK	Schematic Diagram – Diesel Generator 0 Engine Control System	Revision T
1E-0-4412AL	Schematic Diagram – Diesel Generator 0 Engine Control System	Revision G
1E-0-4412AM	Schematic Diagram – Diesel Generator 0 Engine Control System	Revision M
1E-0-4412AN	Schematic Diagram – Diesel Generator 0 Alarms	Revision Z
1E-0-4412AQ	Part List Diesel Generator 0	Revision K
1E-0-4412AR	Schematic Diagram – Diesel Generator 0 Alarms	Revision L
1E-0-4412AS	Schematic Diagram – Diesel Generator 0 Field Conditioning Relay A11	Revision A
1E-0-4412AT	Schematic Diagram – Diesel Generator 0 Engine Lube Oil Soak Back Pump B7A	Revision C
1E-0-4412BA	Schematic Diagram – Unit 1,2 Diesel Generator 0 Alarm System	Revision B
1E-0-4412ZA	Loop Schematic Diagram – Diesel Generator System	Revision E
1E-0-4418AA	Schematic Diagram – Diesel Fuel Oil System	Revision U

Number	Title	Revision/ Date
1E-0-4418AB	Schematic Diagram – Diesel Fuel Oil System	Revision K
1E-0-4433AA	Schematic Diagram – Diesel Generator Room Ventilation	Revision M
1E-0-4433AB	Schematic Diagram – Diesel Generator Room Ventilation	Revision K
1E-0-4433AC	Schematic Diagram – Diesel Generator Room Ventilation Alarms	Revision H
1E-0-4433AD	Schematic Diagram – Diesel Generator Room Ventilation	Revision F
1E-1-4000AK	Key Diagram 4160 Volt AC Switchgear 141Y	Revision D
1E-1-4000AM	Key Diagram 4160 Volt AC Switchgear 142Y	Revision D
1E-1-4000AN	Key Diagram 4160 Volt AC Switchgear 143	Revision B
1E-1-4000B	Single Line Diagram Standby Generators and 4160 Volt Buses	Revision N
1E-1-4009AA	Schematic Diagram – 4160 Volt Switchgear 142Y Diesel Generator 1A Feed Active Circuit Breaker 1423 System	Revision Y
1E-1-4009AB	Schematic Diagram – Diesel Generator System	Revision M
1E-1-4009AC	Schematic Diagram – Diesel Cooling Water Strainer	Revision J
1E-1-4009AE	Schematic Diagram – Diesel Generator 1A Generator Engine Control System	Revision R
1E-1-4009AF	Schematic Diagram – Diesel Generator 1A Engine Control System	Revision W
1E-1-4009AG	Schematic Diagram – Diesel Generator 1A Engine Control System	Revision M
1E-1-4009AH	Schematic Diagram – Diesel Generator 1A Engine Control System	Revision Q
1E-1-4009AJ	Schematic Diagram – Diesel Generator 1A Engine Control System	Revision K
1E-1-4009AK	Schematic Diagram – Diesel Generator 1A Engine Control System	Revision N
1E-1-4009AL	Schematic Diagram – Diesel Generator 1A Engine Control System	Revision K
1E-1-4009AM	Schematic Diagram – Diesel Generator 1A Engine Control System	Revision L
1E-1-4009AN	Schematic Diagram – Diesel Generator 1A Alarms System	Revision Y
1E-1-4009AQ	Schematic Diagram – Diesel Generator System	Revision K
1E-1-4009AR	Schematic Diagram – Diesel Generator 1A Field Conditioning Relay	Revision A
1E-1-4009AP	Part List Diesel Generator 1A	Revision H
1E-1-4009ZA	Loop Schematic Diagram – Diesel Generator System	Revision D
1E-1-4011AB	Schematic Diagram – Diesel Generator 1A Annunciator System	Revision L
1E-1-4026AA	Schematic Diagram – Diesel Fuel Oil System	Revision T
1E-1-4026AB	Schematic Diagram – Diesel Fuel Oil System	Revision V
1E-1-4026AC	Schematic Diagram – Diesel Fuel Oil Alarms System	Revision R
1E-1-4072AA	Schematic Diagram – Diesel Generator Room Ventilation System	Revision N
1E-1-4072AB	Schematic Diagram – Diesel Generator Room Ventilation System	Revision G

Number	Title	Revision/ Date
1E-1-4072AC	Schematic Diagram – Diesel Generator Room Ventilation System	Revision L
1E-1-4072AD	Schematic Diagram – Diesel Generator Room Ventilation Alarms	Revision H
1E-1-4072AE	Schematic Diagram – Diesel Generator Room Ventilation System	Revision F
1E-1-4072AF	Schematic Diagram – Diesel Generator Room Ventilation System	Revision G
1E-1-4072AG	Schematic Diagram – Diesel Generator Room Ventilation System	Revision E
1E-1-4072AH	Schematic Diagram – Diesel Generator Room Ventilation System	Revision H
1E-1-4223AA	Schematic Diagram – High Pressure Core Spray Diesel Generation 1B Alarms	Revision Y
1E-1-4223AB	Schematic Diagram – 4160 Volt Switchgear 143 Normal Feed Active Circuit Breaker 1432	Revision V
1E-1-4223AC	Schematic Diagram – 4160 Volt Switchgear 143 Auxiliary Compartment	Revision S
1E-1-4223AD	Schematic Diagram – 4160 Volt Switchgear 143 Feed from Diesel Generator 1B	Revision S
1E-1-4223AE	Schematic Diagram – High Pressure Core Spray Pump	Revision R
1E-1-4223AF	Schematic Diagram – 4160 Volt Switchgear 143 Feed to Transformer 143-1	Revision G
1E-1-4223AG	Schematic Diagram – HPCS Diesel Generator 1B Protective Relaying	Revision L
1E-1-4223AH	Schematic Diagram – HPCS Diesel Generator 1B Engine Control	Revision X
1E-1-4223AJ	Schematic Diagram – HPCS Diesel Generator 1B Engine Control	Revision T
1E-1-4223AK	Schematic Diagram – HPCS Diesel Generator 1B Engine Control	Revision R
1E-1-4223AL	Schematic Diagram – HPCS Diesel Generator 1B Engine Control	Revision Q
1E-1-4223AM	Schematic Diagram – HPCS Diesel Generator 1B Engine Control	Revision T
1E-1-4223AN	Schematic Diagram – HPCS Diesel Generator 1B Engine Control	Revision R
1E-1-4223AP	Schematic Diagram – HPCS Diesel Generator 1B Engine Control	Revision R
1E-1-4223AQ	Schematic Diagram – HPCS Diesel Generator 1B Engine Control	Revision R
1E-1-4223AR	Schematic Diagram – HPCS Diesel Generator 1B Engine Control	Revision R
1E-1-4223AS	Schematic Diagram – HPCS 125 Volt DC Battery Charger 1C	Revision G
1E-1-4223AT	Schematic Diagram – HPCS Diesel Cooling Water Strainer	Revision G

Number	Title	Revision/ Date
1E-1-4223AU	Schematic Diagram – Speed Relay Tachometer Panel 4240	Revision F
1E-1-4223AV	Schematic Diagram – HPCS Diesel Generator 1B Engine Control	Revision F
1E-2-4000AK	Key Diagram 4160 Volt Switchgear 241Y	Revision D
1E-2-4000AM	Key Diagram 4160 Volt Switchgear 242Y	Revision E
1E-2-4000AN	Key Diagram 4160 Volt Switchgear 243	Revision C
1E-2-4000B	Single Line Diagram Standby Generators and 4160 Volt Buses	Revision L
1E-2-4009AA	Schematic Diagram – 4160 Volt Switchgear 242Y Diesel Generator 2A Feed Active Circuit Breaker 2423	Revision U
1E-2-4009AB	Schematic Diagram – Diesel Generator System	Revision l
1E-2-4009AC	Schematic Diagram – Diesel Cooling Water Strainer	Revision H
1E-2-4009AE	Schematic Diagram – Diesel Generator 2A Engine Control System	Revision M
1E-2-4009AF	Schematic Diagram – Diesel Generator 2A Engine Control System	Revision U
1E-2-4009AG	Schematic Diagram – Diesel Generator 2A Engine Control System	Revision N
1E-2-4009AH	Schematic Diagram – Diesel Generator 2A Engine Control System	Revision P
1E-2-4009AJ	Schematic Diagram – Diesel Generator 2A Engine Control System	Revision M
1E-2-4009AK	Schematic Diagram – Diesel Generator 2A Engine Control System	Revision M
1E-2-4009AL	Schematic Diagram – Diesel Generator 2A Engine Control System	Revision K
1E-2-4009AM	Schematic Diagram – Diesel Generator 2A Engine Control System	Revision K
1E-2-4009AN	Schematic Diagram – Diesel Generator 2A Alarms	Revision Y
1E-2-4009AQ	Schematic Diagram – Diesel Generator	Revision K
1E-2-4009AP	Part List Diesel Generator 2A Alarms	Revision G
1E-2-4009AR	Schematic Diagram – Diesel Generator 2A Field Conditioning Relay	Revision A
1E-2-4009ZA	Loop Schematic Diagram – Diesel Generator	Revision E
1E-2-4026AA	Schematic Diagram – Diesel Fuel Oil System	Revision P
1E-2-4026AB	Schematic Diagram – Diesel Fuel Oil System	Revision T
1E-2-4026AC	Schematic Diagram – Diesel Fuel Oil Alarms System	Revision L
1E-2-4072AB	Schematic Diagram – Diesel Generator Room Ventilation System	Revision E
1E-2-4072AA	Schematic Diagram – Diesel Generator Room Ventilation System	Revision K
1E-2-4072AD	Schematic Diagram – Diesel Generator Room Ventilation Alarms	Revision F
1E-2-4072AE	Schematic Diagram – Diesel Generator Room Ventilation System	Revision E

Number	Title	Revision/ Date
1E-2-4072AF	Schematic Diagram – Diesel Generator Room Ventilation System	Revision E
1E-2-4072AG	Schematic Diagram – Diesel Generator Room Ventilation System	Revision D
1E-2-4072AH	Schematic Diagram – Diesel Generator Room Ventilation System	Revision D
1E-2-4072AC	Schematic Diagram – Diesel Generator Room Ventilation System	Revision G
1E-2-4223AM	Schematic Diagram – HPCS Diesel Generator 2B Engine Control	Revision U
1E-2-4223AB	Schematic Diagram – 4160 Volt Switchgear 243 Normal Feed Active Circuit Breaker 2432	Revision P
1E-2-4223AC	Schematic Diagram – 4160 Volt Switchgear 243 Auxiliary Compartment	Revision Q
1E-2-4223AD	Schematic Diagram – 4160 Volt Switchgear 243 Feed from Diesel Generator 2B	Revision R
1E-2-4223AE	Schematic Diagram – HPCS Pump	Revision P
1E-2-4223AF	Schematic Diagram – 4160 Volt Switchgear 243 Feed to Transformer 2E22-S003	Revision E
1E-2-4223AG	Schematic Diagram – HPCS Diesel Generator 2B Protective Relaying	Revision L
1E-2-4223AH	Schematic Diagram – HPCS Diesel Generator 2B Engine Control	Revision R
1E-2-4223AJ	Schematic Diagram – HPCS Diesel Generator 2B Engine Control	Revision T
1E-2-4223AK	Schematic Diagram – HPCS Diesel Generator 2B Engine Control	Revision P
1E-2-4223AL	Schematic Diagram – HPCS Diesel Generator 2B Engine Control	Revision U
1E-2-4223AA	Schematic Diagram – HPCS Diesel Generation 2B Alarms	Revision V
1E-2-4223AN	Schematic Diagram – HPCS Diesel Generator 2B Engine Control	Revision R
1E-2-4223AP	Schematic Diagram – HPCS Diesel Generator 2B Engine Control	Revision U
1E-2-4223AQ	Schematic Diagram – HPCS Diesel Generator 2B Engine Control	Revision V
1E-2-4223AR	Schematic Diagram – HPCS Diesel Generator 2B Engine Control	Revision P
1E-2-4223AS	Schematic Diagram – HPCS 125 Volt DC Battery Charger 2C	Revision G
1E-2-4223AT	Schematic Diagram – HPCS Diesel Cooling Water Strainer	Revision J
1E-2-4223AU	Schematic Diagram – Speed Relay Tachometer Panel 4240	Revision F
1E-2-4223AV	Schematic Diagram – HPCS Diesel Generator 2B Engine Control	Revision K
74-2130-01	General Plan for Fuel Oil Storage Tanks 1(2)DO02T	Revision 5
74-2130-02	24 Inch Diameter Shell Manhole Cover – Fuel Oil Storage Tanks	Revision 3

Number	Title	Revision/ Date
74-2130-03	24 Inch Diameter Roof Manhole Cover – Fuel Oil Storage Tanks	Revision 2
74-2130-04	Four Inch Diameter Overflow Line – Oil Storage Tanks	Revision 4
74-2130-05	Two Inch Diameter Shell Coupling – Fuel Oil Storage Tanks	Revision 2
74-2130-06	Three Inch Diameter Vent Line – Fuel Oil Storage Tanks	Revision 3
74-2130-07	3 Diameter Fill Line – Fuel Oil Storage Tanks 1(2)DO02T	Revision 3
74-2130-08	Two Inch Diameter Roof Coupling – Fuel Oil Storage Tanks	Revision 2
74-2130-09	Two Inch Diameter Roof Coupling – Fuel Oil Storage Tanks	Revision 2
74-2130-10	1½ Inch Diameter Roof Coupling – Fuel Oil Storage Tanks	Revision 3
74-2130-11	Platform – Fuel Oil Storage Tanks 1(2)DO02T	Revision 2
74-2130-12	Platform Details – Fuel Oil Storage Tanks 1(2)DO02T	Revision 2
74-2130-13	Ladder – Fuel Oil Storage Tanks 1(2)DO02T	Revision 4
74-2130-14	Shell – Fuel Oil Storage Tanks 1(2)DO02T	Revision 4
74-2130-15	Bottom – Fuel Oil Storage Tanks 1(2)DO02T	Revision 2
74-2130-16	Dome Roof – Fuel Oil Storage Tanks 1(2)DO02T	Revision 2
74-2130-17	Anchor Bolt Chairs – Fuel Oil Storage Tanks 1(2)DO02T	Revision 4
74-2130-18	Nameplate and Bracket – Fuel Oil Storage Tank 1DO02T	Revision 2
74-2130-19	Nameplate and Bracket – Fuel Oil Storage Tank 2DO02T	Revision 4
74-2130-20	1½ Diameter Bubbler Pipe – Fuel Oil Storage Tanks 1(2)DO02T	Revision 3
74-2130-21	Internal Piping for 2 Inch Diameter Shell Coupling 1(2)DO02T	Revision 1
74-2130-22	2 Inch Diameter Drain and Sample Nozzle 1(2)DO02T	Revision 1
74-2130-23	Overflow Weir Assembly – Fuel Oil Storage Tanks 1(2)DO02T	Revision 1
74-2130-F	Anchor Bolt Setting Plan – Fuel Oil Storage Tanks 1(2)DO02T	Revision 3
74-2130-PC-1	Print Control Record – Fuel Oil Storage Tanks 1(2)DO02T	Revision 11
74-2131-01	Diesel Fuel Storage Tank General Plan	Revision 4
74-21311-A	Diesel Fuel Storage Tank Orientation	Revision 5
80653X1	Architectural Drawings (JW Doors, North American)	October 11, 1976
94-13640	Anchor Darling Wedge Gate Valve Drawing	Revision B2
A-24069	HPCS Diesel Oil Transfer Pump 1DO02P (J-2908)	December 22, 1977
A-466-1	Door Details	Revision F
BF-865-3	Erection Drawing – Diesel Generator Room Piping Ground Floor	March 6, 1979
BF-865-4	Erection Drawing – Diesel Generator Room Piping Ground Floor	March 6, 1979
BF-865-5	Erection Drawing	Revision C
C-74-187	HPCS Diesel Day Tank (J-2948)	February 28, 1994
C-74-188	Diesel Generator Day Tanks 0DO02T, 1DO05T and 2DO05T	February 28, 1994
EMD 645E4	Nuclear Service Engine Rating at Elevated Temperatures	June 11, 1992
FF-15303/4	Clarage Centrifugal Fan Size 36½ Inches NH CCW-UBD	March 3, 1977
M-54-1	Piping and Instrumentation Drawing – Index and Symbols	Revision Y
M-54-2	Piping and Instrumentation Drawing – Index and Symbols	Revision C
M-54-3	Piping and Instrumentation Drawing – Index and Symbols	Revision E
M-54-4	Piping and Instrumentation Drawing – Index and Symbols	Revision A
M-54-5	Piping and Instrumentation Drawing – Index and Symbols	Revision A

Number	Title	Revision/ Date
M-83-1	Piping and Instrumentation Drawing – Diesel Generator Auxiliary System	Revision AL
M-83-2	Piping and Instrumentation Drawing – Diesel Generator Auxiliary System	Revision AA
M-83-3	Piping and Instrumentation Drawing – Diesel Generator Auxiliary System	Revision AT
M-83-4	Piping and Instrumentation Drawing – Diesel Generator Lube Oil System	Revision E
M-85	Piping and Instrumentation Drawing – Diesel Oil System	Revision AB
M-87-1	Piping and Instrumentation Drawing – CSCS Equipment Cooling Water System	Revision AM
M-87-2	Piping and Instrumentation Drawing – CSCS Equipment Cooling Water System	Revision AG
M-87-3	Piping and Instrumentation Drawing – CSCS Equipment Cooling Water System	Revision J
M-132	Piping and Instrumentation Drawing – Diesel Oil System	Revision AA
M-134-1	Piping and Instrumentation Drawing – CSCS Equipment Cooling Water System	Revision AC
M-134-2	Piping and Instrumentation Drawing – CSCS Equipment Cooling Water System	Revision AA
M-134-3	Piping and Instrumentation Drawing – CSCS Equipment Cooling Water System	Revision K
M-830-1	CSCS Piping	Revision AM
M-830-2	CSCS Piping	Revision AK
M-830-3	CSCS Piping	Revision AC
M-830-4	CSCS Piping	Revision W
M-830-5	CSCS Piping	Revision T
M-830-6	CSCS Piping	Revision W
M-830-7	CSCS Piping	Revision J
M-830-8	CSCS Piping	Revision D
M-830-9	CSCS Piping Miscellaneous Details	Revision A
M-865	Diesel Generator 0 Miscellaneous Tubing	Revision D
M-865-9	Diesel Generator Room Miscellaneous Section Piping	Revision M
M-930-1	CSCS Piping	Revision AA
M-930-2	CSCS Piping	Revision M
M-930-3	CSCS Piping	Revision T
M-930-4	CSCS Piping	Revision P
M-930-5	CSCS Piping	Revision R
M-930-6	CSCS Piping	Revision F
M-930-7	CSCS Piping	Revision G
M-930-8	CSCS Piping Miscellaneous Details	Revision A
M-1395-1	Diesel Generator Room Ventilation System Elevation 736'-6"	Revision A
M-1395-2	Diesel Generator Room Ventilation System Details	Revision A

Number	Title	Revision/ Date
M-1396	Diesel Generator Room Ventilation System Elevation 736’-6"	Revision N
M-1444	Piping and Instrumentation Drawing – Diesel Generator Room Ventilation System	Revision J
M-1445	Piping and Instrumentation Drawing – HPCS Diesel Generator Room, Switchgear Room and Pump Room Ventilation System	Revision L
M-1446	Piping and Instrumentation Drawing – HPCS Diesel Generator Room, Switchgear Room and Pump Room Ventilation Systems	Revision L
M-1447	Piping and Instrumentation Drawing – Diesel Generator Room Ventilation System	Revision J
M-1465	Piping and Instrumentation Drawing – CSCS Equipment Cooling System	Revision E
M-1591-3	Equipment Foundations Auxiliary Building	Revision R
M-2085-1	Controls and Instrumentation Drawing – Diesel Fuel Oil	Revision J
M-2085-2	Controls and Instrumentation Drawing – Diesel Fuel Oil	Revision E
M-2087	Controls and Instrumentation Drawing – CSCS Equipment Cooling Water	Revision D
M-2132-1	Controls and Instrumentation Drawing – Diesel Fuel Oil	Revision A
M-2132-2	Controls and Instrumentation Drawing – Diesel Fuel Oil	Revision A
M-2134	Controls and Instrumentation Drawing – CSCS Equipment Cooling Water	Revision D
M-3444-1	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision C
M-3444-2	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision C
M-3444-3	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision C
M-3444-4	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision C
M-3445-1	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision D
M-3445-2	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision C
M-3445-3	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision D
M-3445-4	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision C
M-3446-1	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision E
M-3446-2	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision D
M-3446-3	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision D
M-3446-4	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision D

Number	Title	Revision/ Date
M-3447-1	Controls and Instrumentation Drawing – Heating, Ventilation and Air Conditioning	Revision D
M-3447-2	Heating, Ventilation and Air Conditioning Controls and Instrumentation Drawing – Detail Diagram	Revision C
M-3447-3	Heating, Ventilation and Air Conditioning Controls and Instrumentation Drawing – Detail Diagram	Revision C
VPF 3069-143	Report of Performance Test for Pump S/N 0972126 (Pump Curve – Ingersoll-Rand)	Revision 1
Engineering Changes		
331943	0, 1A, and 1B Diesel Generator Exhaust Penthouse Screen	September 5, 2002
334017	Increased Cooling Water Temperature to a New Maximum Allowable of 104°F	Revision 0
334569	0DG-ST-11 Line Replacement (Lube Oil Sensing Line Replacement)	December 27, 2001
337326	Temporary Modification – Temporary Repair to 2E22-S001 Heat Exchanger Partition Plate	May 28, 2002
337814	Evaluation of Loss of 0 Diesel Generator Circulating Lube Oil Pump	July 5, 2002
338718	Temporary Configuration Change to Remove the Disc from Valve 0DG005	September 6, 2002
338926	Diesel Generator Starting Air System Sizing – Five Start Capability	September 24, 2002
338930	Diesel Generator Fuel Oil Storage Capacity Evaluation	September 23, 2002
Lesson Plans		
011	Emergency Diesel Generators and Auxiliaries	November 14, 2000
065	Core Standby Cooling System Equipment Cooling Water	April 2, 2001
119	Plant Heating, Ventilation and Air Conditioning	Revision 2
Miscellaneous		
44404	Receipt Inspection Diesel Generator Temperature Control Valves	August 26, 1999
IST Pump Data	Inservice Test Data for Pumps from September 2000 to July 2002 Compiled from Inservice Testing Access™ Database	N/A
IST-LAS-BDOC-V-6	LaSalle – Inservice Testing Basis Document / 0 Diesel Generator Fuel Transfer Pump 0DO01P	August 24, 2001
Letter	American Nuclear Society to Commonwealth Edison (Terry O'Brien): Request for Clarification on ANSI/ANS-59.51-1989	March 22, 1995
Letter	Sargent and Lundy Engineers to Stewart and Stevenson Services, Inc: Sargent and Lundy Specification J-2544	July 24, 1979
LU2000-121	UFSAR Change Request – UFSAR Tables 9.4-15 and 9.4-16	August 21, 2000
LU2001-119	UFSAR Change Request, Change #4 – Diesel Generator Facilities Ventilation System	December 3, 2001

Number	Title	Revision/ Date
MNGP-FP95-01	Report of the Fire Endurance and Hose Stream Testing of Two Single, Fire Rated Door Assemblies with Excessive Clearances Installed in a Concrete Block Wall	October 22, 1986
NES-MS-09.01	Diesel Generator Preventive Maintenance Basis Document	Revision 4
PRA Results	2001 Key LaSalle 1 and 2 Probabilistic Risk Assessment Results, Including LaSalle Model 2001A General Results	N/A
TP-EXE-IST-00-04	Exelon Inservice Testing Program Technical Position – Classification of Diesel Oil Transfer Pumps as Skid Mounted Components	Revision 1

Modifications

43283	Install Stop Pin in Diesel Generator 1B Governor	Revision 0
43580	Install Heavy Duty Turbocharger	Revision 0
44934	Revise Diesel Generator Starting Circuit	Revision 0
46030	0 Diesel Generator Instrumentation Tubing Upgrade	Revision 0
46030	Diesel Generator Small Diameter Tubing Replacement	Revision 1
47004	Addition of an Interposing Relay in the 0 Diesel Generator Output Breaker Closing Circuit	Revision 0
47010	Addition of an Interposing Relay in the 0 Diesel Generator Output Breaker Closing Circuit	Revision 0
47478	Valve Changeout for Diesel Generator 2DG036	Revision 1
48023	1B Diesel Generator Run Solenoid Replacement	Revision 0
48640	Diesel Generator 2A Reverse Power Relay Replacement Exempt Change	Revision 0
48720	Replace Diesel Generator 0 Ground Fault Relay	Revision 1
48844	Install Orifice in HPCS Full Flow Test Line	Revision 1
49699	Increase 2A Diesel Generator Room Ventilation Fan Setpoint Tolerance	Revision 0
49703	Revise Power Transfer Logic for Diesel Generator 0 Room Ventilation Fan	Revision 0
49854	Engineered Safety Features Division 1 Thermal Overload Heater Settings for Continuous Duty Motors	Revision 0
50800	Modify 1B Diesel Generator Voltage Regulator Circuit Wiring	Revision 1
51093	Modify 2A Diesel Generator Exhaust Expansion Joint Bolting/ Holes for Proper Alignment	Revision 0
51432	Revise CC-AA-109 to Indicate That Operating Procedures Do Not Require Revision Prior to Operating Authorization and to Correct the Affected Alarm Procedure	Revision 2
51433	Defeat Diesel Generator 1A Governor Auto Reset Feature	Revision 2
9500452	Install Bypass Switches and Main Control Room Alarms to Replace Unreliable Agastat Relays	Revision 1
9600195	Unit 1 Division 2 Residual Heat Removal Service Water Keepfill	Revision 2
9600567	Revise Design Change Package to Reflect Voltage Regulator Model Number Change	Revision 1

Number	Title	Revision/ Date
Operability Evaluations		
97058	Calculation Establishing the Design Basis for the 54 Inch Bypass Line Cannot be Located	October 24, 1997
99002	High Current Recorded on Unit 1 Residual Heat Removal Service Water Pumps	January 27, 1999
99015	Breaker for 0DG01P Failed to Close	January 14, 1999
01020	2A Emergency Diesel Generator Cylinder Exhaust Temperatures	December 11, 2001
01023	Basis for Diesel Generator Operability with Regard to Minimum Room Temperatures	January 3, 2002
02010	Diesel Generator Facilities Ventilation System Actuator	June 4, 2002
Preoperational Tests		
LST-81-038	1A Diesel Generator Five Start Capacity Test	October 9, 1981
LST-81-057	0 Diesel Generator Five Start Capacity Test	October 27, 1981
LST-81-061	1B Diesel Generator Start Capacity Test	December 10, 1981
LST-81-082	2A Diesel Generator Five Start Capacity Test (Test Failure)	December 7, 1981
LST-81-083	2A Diesel Generator Five Start Capacity Test	March 26, 1982
LST-82-104	Diesel Generator 0, 1A, 1B, 2A Starts on Stored Air	March 30, 1982
LST-83-212	2B Diesel Generator Start Capacity Test	January 4, 1984
Procedures		
CC-AA-103-2001	Setpoint Change Control	Revision 0
CC-AA-309	Control of Design Analyses	Revision 2
CC-AA-309-1001	Guidelines for Preparation and Processing Design Analyses	Revision 0
LES-GM-103	Inspection of 4.16 Kilovolt and 6.9 Kilovolt ITE Circuit Breakers	Revision 31
LES-RH-100	Unit 1 Residual Heat Removal System Division 1 Relay Logic	Revision 17
LIP-DG-501A	Unit 1 Diesel Generator 1A Fuel Oil Storage Tank Level Switch and Indication Calibration	June 23, 2001
LIP-DG-501B	Unit 1 Diesel Generator 1B Fuel Oil Storage Tank Level Switch and Indication Calibration	November 22, 2000
LIP-DG-503A	Unit 1 Diesel Generator 1A Fuel Oil Day Tank Level Switch and Indication Calibration	November 5, 2001
LIP-DG-503B	Unit 1 Diesel Generator 1B Fuel Oil Day Tank Level Switch and Indication Calibration	June 25, 2001
LIP-DG-603A	Unit 2 Diesel Generator 2A Fuel Oil Day Tank Level Switch and Indication Calibration	November 2, 2001
LIP-DG-603B	Unit 2 Diesel Generator 2B Fuel Oil Day Tank Level Switch and Indication Calibration	June 23, 2001
LMS-DG-03	Diesel Generator Air Start System Pressure Reducer Adjustment	Revision 2
LOA-AP-101	Unit 1, AC Power System Abnormal	Revision 15
LOA-DG-101	Diesel Generator Failure, Unit 1	Revision 2
LOA-DG-201	Diesel Generator Failure, Unit 2	Revision 1

Number	Title	Revision/ Date
LOA-FX-201	Unit 2 Safe Shutdown with a Loss of Offsite Power and a Fire in the Control Room or Auxiliary Electric Equipment Room	Revision 6
LOP-DF-01	Startup of Diesel Building Floor Drains	Revision 2
LOP-DF-02	Filling of Diesel Building Floor Drain Loop Seals	Revision 4
LOP-DG-01	Preparation for Standby Operation of Diesel Generators	Revision 29
LOP-DG-02	Diesel Generator Startup and Operation	Revision 31
LOP-DG-03	Diesel Generator Shutdown	Revision 21
LOP-DG-04	Diesel Generator Special Operations	Revision 33
LOP-DO-01	Receiving and Sampling New Diesel Fuel Oil	Revision 23
LOP-DO-02	Transferring Diesel Fuel Oil from Storage Tanks to Day Tanks	Revision 1
LOP-DO-03	Transferring Oil to the Diesel Fire Pump Day Tanks	Revision 14
LOP-DO-04	Treating Biological Growth in Diesel Fuel Oil	Revision 0
LOP-DO-05	Diesel Fire Pump Day Tank 0FP01TA/B Draining	Revision 3
LOP-VD-01	Startup and Operation of Ventilation System for Diesel Generators 1(2)A and Associated Diesel Fuel Storage Rooms	Revision 7
LOP-VD-02	Startup and Operation of Ventilation Systems for 1(2)B Diesel Generator, Diesel Fuel Storage, HPCS Switchgear and HPCS Diesel Cooling Water Pump Rooms	Revision 10
LOP-VD-03	Startup and Operation of Ventilation Systems for Diesel Generator 0 and Associated Diesel Fuel Storage Rooms	Revision 10
LOP-VD-04	Startup and Operation of HPCS Battery Room Ventilation System	Revision 3
LOP-VD-05	Shutdown of Ventilation System for Diesel Generator 1(2)A and Associated Diesel Fuel Storage Rooms	Revision 10
LOP-VD-06	Shutdown of Ventilation Systems for Diesel Generator 1(2)B, HPCS Diesel Fuel Storage, HPCS Switchgear and Diesel Generator Cooling Water Pump Rooms	Revision 11
LOP-VD-07	Shutdown of Ventilation Systems for Diesel Generator Room 0 and Associated Diesel Fuel Storage Room	Revision 11
LOP-VD-08	Shutdown of Ventilation System for HPCS Battery Room	Revision 4
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	Revision 46
LOS-DG-M2	1(2)A Diesel Generator Auxiliaries Operability Test	Revision 51
LOS-DG-M3	1(2)B Diesel Generator Auxiliaries Operability Test	Revision 50
LOS-DG-Q1	0 Diesel Generator Auxiliaries Inservice Test	Revision 36
LOS-DG-Q2	1(2)A Diesel Generator Auxiliaries Inservice Test	Revision 29
LOS-DG-Q3	1(2)B Diesel Generator Auxiliaries Inservice Test	Revision 37
LOS-DG-R0	0 Diesel Generator Twenty Four Hour Run Surveillance	Revision 0
LOS-DG-R1A	1A Diesel Generator Twenty Four Hour Run Surveillance	Revision 0
LOS-DG-R1B	1B Diesel Generator Twenty Four Hour Run Surveillance	Revision 0
LOS-DG-R2A	2A Diesel Generator Twenty Four Hour Run Surveillance	Revision 0
LOS-DG-R2B	2B Diesel Generator Twenty Four Hour Run Surveillance	Revision 0
LOS-DG-SR1	Diesel Generator Simultaneous Start Test	Revision 11
LOS-DG-SR2	0 Diesel Generator Action Statement Operability Test	Revision 15
LOS-DG-SR3	1(2)A Diesel Generator Action Statement Operability Test	Revision 19

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LOS-DG-SR4	1(2)B Diesel Generator Action Statement Operability Test	Revision 15
LOS-DO-SR1	Diesel Fuel Oil Storage Tank Cleaning	Revision 10
LOS-DO-SR2	Diesel Fuel Oil Analysis Verification (New Fuel Oil)	Revision 4
LOS-DO-M1	Diesel Fuel Oil Monthly Analysis Verification (Stored Fuel Oil)	Revision 3
LOS-DO-SR1	Diesel Fuel Oil Storage Tank Cleaning	Revision 10
LOS-DO-SR2	Diesel Fuel Oil Analysis Verification (New Fuel Oil)	Revision 4
LOS-RH-Q4	Quarterly Surveillance for Cycling CSCS Bypass Line Isolation Valve	Revision 2
LTS-200-29	1B Diesel Generator Flow Balance Test, Division 3	Revision 4
LTS-500-109	Integrated Division 1 Response Time Surveillance	Revision 12
LTS-500-209	Integrated Division 1 ECCS Response Time	Revision 8
LTS-600-23	CSCS Cooling Water Screen Bypass Supply Line and Circulating Water Pump Inlet Bays Inspection	Revision 6
LTS-800-7	0 Diesel Generator Trips and Trip Bypass Logic Test	Revision 18
LTS-800-101	0 Diesel Generator Start and Load Acceptance Surveillance	Revision 8
LTS-800-104	Unit 0 Diesel Generator Twenty-Four Hour Run Surveillance	Revision 10
LTS-800-105	1A Diesel Generator Twenty-Four Hour Run Surveillance	Revision 9
LTS-1000-29	Watertight Door and Penetration Inspection	Revision 9
NEP-11-01	Procurement and Use of Items for Repair and Replacement of Safety Related and Regulatory Related Equipment	Revision 0
SM-AA-300	Procurement Engineering Support Activities	Revision 0

Surveillances (Date Shown Is Date Surveillance Was Completed)

LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	April 19, 2000
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	April 20, 2000
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	May 17, 2000
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	June 14, 2000
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	July 12, 2000
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	August 9, 2000
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	October 3, 2000
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	November 1, 2000
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	December 1, 2000
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	December 27, 2000
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	January 24, 2001
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	February 20, 2001
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	March 21, 2001
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	April 18, 2001
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	May 16, 2001
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	June 13, 2001
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	July 11, 2001
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	September 11, 2001
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	October 3, 2001

Number	Title	Revision/ Date
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	October 31, 2001
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	November 28, 2001
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	January 22, 2002
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	February 20, 2002
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	March 18, 2002
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	April 17, 2002
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	May 13, 2002
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	July 10, 2002
LOS-DG-M1	0 Diesel Generator Auxiliaries Operability Test	August 7, 2002
LOS-DG-M2	1A Diesel Generator Auxiliaries Operability Test	March 14, 2000
LOS-DG-M2	1A Diesel Generator Auxiliaries Operability Test	August 30, 2000
LOS-DG-M2	1A Diesel Generator Auxiliaries Operability Test	February 13, 2001
LOS-DG-M2	1A Diesel Generator Auxiliaries Operability Test	November 21, 2001
LOS-DG-M2	1A Diesel Generator Auxiliaries Operability Test	April 9, 2002
LOS-DG-M2	1A Diesel Generator Auxiliaries Operability Test	May 9, 2002
LTS-200-10	Low Pressure Core Spray Pump Motor Cooler Service Water Side Flowrate Test	September 7, 2000
LTS-200-10	Low Pressure Core Spray Pump Motor Cooler Service Water Side Flowrate Test	February 21, 2002
LTS-200-11	Diesel Generator Cooling Heat Exchanger Thermal Performance Monitoring	October 23, 2000
LTS-200-11	Diesel Generator Cooling Heat Exchanger Thermal Performance Monitoring	October 28, 2000
LTS-200-11	Diesel Generator Cooling Heat Exchanger Thermal Performance Monitoring	September 5, 2002
LTS-200-229	2B Diesel Generator Flow Balance Test, Division 3	March 10, 2000
LTS-200-229	2B Diesel Generator Flow Balance Test, Division 3	August 24, 2000
LTS-200-27	0 Diesel Generator Cooling Water System Flow Test	January 31, 1999
LTS-200-27	0 Diesel Generator Cooling Water System Flow Test	March 2, 2001
LTS-200-27	0 Diesel Generator Cooling Water System Flow Test	April 24, 2001
LTS-200-28	1A Diesel Generator Flow Balance Test, Division 2	September 30, 1999
LTS-200-28	1A Diesel Generator Flow Balance Test, Division 2	August 9, 2001
LTS-600-19	Corbicula and Zebra Mussel Inspections	March 1, 2002
LTS-600-23	CSCS Cooling Water Screen Bypass Supply Line and Circulating Water Pump Inlet Bays Inspection	March 27, 2000

Training Request Initiated as a Result of the Inspection

02-1386	Use of Calculation Blocks to Reference Input Documents and Output Uses of the Calculation	September 26, 2002

Vendor Manuals

IB 6.2.2.7-1G	Installation/Maintenance Instructions, Medium-Voltage Power Circuit Breakers	Revision 0

Number	Title	Revision/ Date
J-0220.000	Gould Pump VETIP Manual	March 19, 2001
J-0620.000	Magnetrol VETIP Manual	May 1974
J-0154	Grove Model 80-896 Flexflo Valve with Pilot Regulator	July 18, 1963
Work Orders		
00449198-01	Repair Heat Exchanger Internal Coating and Partition Plate	Revision 0
00449199-02	Remove and Reinstall Strainer Motor	Revision 0
00449199-01	Strainer Tubes are Partially Clogged with Relic Shells	Revision 0
88050398-01	0 Diesel Generator Cooling Water Pump Motor Replacement	Revision 0
94062049 01	0 Diesel Generator Cylinder Valves Will Be Replaced with New Style Valves	December 13, 1994
94062050 01	1A Diesel Generator Cylinder Valves Will Be Replaced with New Style Valves	December 5, 1994
94062051 01	1B Diesel Generator Cylinder Valves Will Be Replaced with New Style Valves	December 22, 1994
94062053 01	2A Diesel Generator Cylinder Valves Will Be Replaced with New Style Valves	November 21, 1994
94083288 01	2B Diesel Generator Cylinder Valves Will Be Replaced with New Style Valves	December 5, 1994
99103099 01	Unit 1 Diesel Generator 1A Fuel Oil Storage Tank Level Switch and Indication Calibration	October 9, 2001
99118412 01	Diesel Generator 1A 24-Hour Run Surveillance	May 10, 2001
99147235 01	Unit 1 Diesel Generator 1B Fuel Oil Storage Tank Level Switch and Indication Calibration	June28, 2001
99174451 01	Unit 1 Diesel Generator 1B Fuel Oil Day Tank Level Switch and Indication Calibration	September 18, 2001
99217636 01	Unit 1 Diesel Generator 1A Fuel Oil Day Tank Level Switch and Indication Calibration	April 10, 2002