U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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Report No:	50-331/98012(DRP)
Licensee:	Alliant, IES Utilities Inc. 200 First Street S.E. P. O. Box 351 Cedar Rapids, IA 52406-0351
Facility:	Duane Arnold Energy Center
Location:	Palo, Iowa
Dates:	July 30 through September 4, 1998
Inspectors:	P. Prescott, Senior Resident Inspector M. Kurth, Resident Inspector
Approved by:	R. D. Lanksbury, Chief Reactor Projects Branch 5

EXECUTIVE SUMMARY

Duane Arnold Energy Center
NRC Inspection Report 50-331/98012(DRP)

This inspection report included the resident inspectors' evaluation of aspects of licensee performance in the areas of operations, engineering, maintenance, and plant support.

Operations

- The conduct of operations continued to be professional. Good communication and coordination between operations and reactor engineering personnel were noted during the scheduled power reduction for turbine valve testing (Section O1.1).

- Based on interviews with licensed operators, and the assessment of operator log entries for limiting conditions for operation associated with certain plant conditions, the operations training staff provided adequate training to operations personnel in support of Improved Technical Specification implementation (Section O5.1).

- The licensee effectively used its corrective actions program to track and resolve questions that developed during Improved Technical Specification training sessions to ensure consistent guidance was provided to operating crews (Section O5.1).

- The licensee's historic review of operability of the torus water level transmitters following the identification of out-of-tolerance calibration equipment was thorough (Section O7.2).

Maintenance

- In general, surveillance test and maintenance activities were conducted in an acceptable manner. The inspectors observed good planning for and execution of maintenance activities associated with the residual heat removal and residual heat removal service water system maintenance outages (Section M1.1).

- The licensee adequately addressed industry issues described in General Electric Service Information Letters (Section M7.1).

Engineering

- The inspectors noted that the temporary modifications in place had adequate safety evaluations and proposed engineering resolutions. There were no significant longstanding temporary modifications in place for equipment important to safety. However, several of the temporary modifications for nonsafety-related equipment were not being addressed in a timely fashion. (Section E1.2).

- The licensee continued to effectively assess and test components and systems for year 2000 computer software readiness. The licensee's goal was to be year 2000 ready by March 1999 (Section E2.1).

Plant Support

- The inspectors concluded that radiological practices observed during maintenance activities and daily walkdowns were adequate (Section R1.1).

- Radiation protection personnel provided effective support during radiography activities that were conducted by contractors on August 26 and 27, 1998. Adequate radiation area and high radiation area boundaries were established and controlled. Survey instruments were properly used to ensure that the radioactive sealed source was in the shielded position after each radiographic exposure (Section R4.1).

Report Details

Summary of Plant Status

The plant began this inspection period at 100 percent power. On August 15 and 16, 1998, the licensee reduced plant power to approximately 85 percent for several hours in order to conduct main turbine valve testing. The plant was operated at approximately 100 percent power for the remainder of the period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments

a. Inspection Scope (71707)

The inspectors followed the guidance of Inspection Procedure 71707 and conducted frequent reviews of plant operations. This included observing routine control room activities, reviewing system tagouts, and attending shift turnovers and crew briefings. The inspectors observed the August 15 and 16, 1998, power reduction for scheduled turbine valve testing.

b. Observations and Findings

The conduct of operations personnel was professional. The inspectors observed strict use of procedures and thorough shift turnovers. Operations personnel performed a well-controlled power reduction for scheduled turbine valve testing. Operators and reactor engineering personnel exhibited good coordination and communication during the evolution.

c. Conclusions

The conduct of operations continued to be professional. Good communication and coordination between operations and reactor engineering personnel were noted during the scheduled power reduction evolution.

O2 Operational Status of Facilities and Equipment

O2.1 General Plant Tours and System Walkdowns (71707)

The inspectors followed the guidance of Inspection Procedure 71707 in walking down accessible portions of several systems. The systems chosen, based on maintenance work activities and probabilistic risk significance, were:

- Emergency diesel generators
- Residual heat removal (RHR)
- RHR service water

Equipment operability, material condition, and housekeeping were acceptable in all cases. The inspectors did not identify any substantive concerns as a result of these walkdowns.

O5 Operator Training and Qualification

05.1 Implementation of Improved Technical Specifications (ITS)

a. Inspection Scope (71707)

The inspectors reviewed the training provided to operators for the implementation of ITS on August 1, 1998. Interviews were conducted with licensed operators. A review of operator logs was conducted to verify that limiting conditions for operation (LCOs) were properly entered for various plant conditions as required by ITS.

b. Observations and Findings

In January 1997, the operations training staff initiated ITS training sessions for operating crews. The operators attended quarterly training classes, including simulator sessions in 1997 and 1998. Initial training consisted of a general overview of ITS and its comparison with the current Technical Specifications (TSs). Each quarter the training focused on different ITS sections and at the end of each quarter operations personnel were tested. Throughout the training sessions, questions were documented using comment resolution forms (CRFs). The CRFs were forwarded to individuals or groups for clarification and resolution. The CRF resolutions were entered in a database to ensure all operating crews were provided with consistent answers to questions.

During the week of March 2, 1998, three DAEC employees and five industry representatives from various nuclear plants performed a peer assessment of the ITS training program. Based on their review, the peer assessment team concluded that, in general, the ITS training program provided the necessary training for implementation of ITS. The peer assessment team identified the need to provide additional training on changes in nominal set point values, and the use of in-service testing program values in surveillance tests. Also, the team identified the need to provide additional training to non-licensed individuals such as supervisors, engineers, and instrument and control technicians. The licensee used its corrective actions program (Action Requests [ARs]) to track the resolution of the peer assessment findings and the CRFs generated during the training sessions.

The inspectors questioned several licensed operators regarding ITS after its August 1, 1998, implementation. The operators were knowledgeable in the proper use of ITS. An assessment of operator logs was conducted to ensure the proper limiting conditions for operation (LCOs) were entered in accordance with plant conditions for that time period. Several isolated minor administrative discrepancies were noted regarding data

entry of LCO completion times in the proper column of the ITS LCO tracking forms. Operation's management provided instructions in the shift orders to correct the discrepancies. The licensee planned to maintain an on-call list in the control room if questions developed regarding ITS. The on-call list consisted of ITS development team members, operations management, and licensing personnel.

c. Conclusions

Based on review of the ITS training course content, interviews with licensed operators, and the assessment of operator log entries for limiting conditions for operation associated with certain plant conditions, the operations training staff provided adequate training to operations personnel in support of ITS implementation. The licensee effectively used its corrective actions program to track and resolve questions that developed during ITS training sessions to ensure consistent guidance was provided to operating crews.

O7 Quality Assurance in Operations

O7.1 Licensee Self-Assessment Activities (40500 and 71707)

During the inspection period, the inspectors observed/reviewed multiple licensee self-assessment activities, including:

- Safety Committee meetings
- Operations Committee meetings

The inspectors observed that licensee management was present and actively participated in the meetings. Items discussed were evaluated in a critical manner and committee members focused on a safe resolution to the issues discussed. The inspectors concluded that the self-assessment activities observed were effective.

O7.2 Torus Water Level Instrumentation Operability

a. Inspection Scope (40500 and 71707)

The inspectors performed an independent evaluation of the operability of torus water level transmitters. The following documents were reviewed: Technical Specifications, Regulatory Guide (RG) 1.97, American National Standard (ANS) 4.5, the Updated Final Safety Analysis Report (UFSAR), and applicable Action Requests (ARs).

b. Observations and Findings

On April 22, 1998, during the refueling outage, the torus water level transmitters (LT) 4397A and B were calibrated using Surveillance Test Procedure (STP) 3.3.3.1-02. Subseq ently, on August 4, 1998, the gage (P644) used for calibrating the torus level transmitters was found out-of-tolerance during recertification.

The STP required an instrument accuracy of +/-1.163" or 0.14 percent. Gage P644 was found out-of-tolerance by 1.44" which did not meet STP 3.3.3.1-02 requirements for accuracy.

The licensee conducted a review of all tasks that were performed using pressure gage P644. Subsequently, on August 17, 1998, the licensee determined that LT 4397A was outside the as-found limits of the STP and declared the LT inoperable. A 30-day limiting condition for operation (LCO) was entered per TS 3.3.3.1. The "B" loop was also declared inoperable and a 7-day LCO was entered. An AR was written to document the condition of the inoperable transmitters and to track the potential reportability of the condition. That same day, the "A" loop was recalibrated and the 7-day LCO was exited. The "B" loop was recalibrated the following day and the 30-day LCO exited.

This issue was potentially reportable due to two loops of torus level indication being outside the surveillance procedure instrument accuracy requirements greater than the allowed LCO time. The TS required that these transmitters be calibrated every 24 months. However, no calibration accuracy is specified in TS. The level transmitters are post-accident monitoring instruments required by RG 1.97, which endorses ANS 4.5. The ANS 4.5 document contained an accuracy guideline of +/- 20 percent of instrument span. Licensee correspondence with the NRC supported this accuracy guideline. The licensee's equipment database listed the +/-20 percent as the required instrument accuracy. The current UFSAR description stated that instrument accuracy was six percent of full instrument scale. This was supported by calculations that determined instrument loop inaccuracies totaled between 5.1 and 5.2 percent. This loop inaccuracy is within the ANS 4.5 guideline of 20 percent.

When the maximum out-of-tolerance as-found condition of the level transmitters was added to the calibration instrument inaccuracies, the error totaled 5.32 percent. Therefore, LT 4397A and B were within the UFSAR specified loop accuracy of 6 percent and had been in an operable condition since April 22, 1998.

c. Conclusions

The inspectors determined that the licensee's historic review of operability of the torus water level transmitter loops was thorough, following the identification of out-of-tolerance calibration equipment.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (62707 and 61726)

The inspectors observed all or portions of the surveillance test activities and work request activities listed below. The applicable surveillance test or work package documentation was reviewed. Specific tests and work request activities observed are listed below:

Maintenance Activities

- Corrective Maintenance Action Request (CMAR) A48517: stator winding cooling motor; troubleshoot cause of high vibration
- CMAR A40426 RHR: service water (RHRSW) discharge strainer continuous flush line GBD-063-2"; replace pitted piping with new piping
- CMAR A38098 "A" RHR: pump discharge check valve V20-0003; inspect lap seat and repair as necessary

Surveillance of Activities

- STP 3.3.1.1-16, Rev. 0, "Turbine First Stage Pressure Permissive Calibration"
- STP 3.8.4-02, Rev. 0, "Battery Connected Cell Checks"
- STP 3.7.7-01, Rev. 1, "Bypass Valves Test"
- STP NS930001, Rev. 0, "Main Turbine Operational Tests"
- STP 3.3.1.1-01, Rev. 0, "Reactor Protection System (RPS) High Pressure Scram Calibration"

b. Observations and Findings

In general, the work associated with these activities was conducted in a professional and thorough manner. Work was performed with the appropriate radiological control measures in place. Technicians were knowledgeable of their assigned tasks and work document requirements. The inspectors noted good planning for and execution of the RHR and RHR service water system maintenance outages. Licensee response to emergent work during the RHR service water system maintenance outage was well coordinated. The inspectors focused particular attention on these two systems because of their probabilistic risk significance. The licensee displayed proper sensitivity to the risk significance of these systems by restoring them to an operable status in a timely fashion.

c. Conclusions

In general, surveillance test and maintenance activities were conducted in an acceptable manner. The inspectors observed good planning for and execution of maintenance activities for the RHR and RHR service water system maintenance outages.

M7 Quality Assurance in Maintenance Activities

M7.1 Operating Experience Document Review - General Electric (GE) Service Information Letters (SIL)

a. Inspection Scope (61726)

The inspectors reviewed several licensee responses to GE SILs to ensure adequate actions were implemented.

b. Observations and Findings

In July 1998, the "D" RHRSW system pump motor shorted upon manual initiation due to winding insulation degradation. The licensee conducted a root cause investigation and determined that a potential contributing factor was the less than adequate predictive maintenance that was being performed on that motor. Based on the root cause evaluation, the licensee determined that GE SIL No. 484, Supplement 2, issued September 7, 1993, provided recommendations to perform tests to predict winding insulation degradation prior to failure. The licensee planned to perform the additional testing shortly after the GE SIL issuance; however, for reasons unknown, the licensee did not follow through and perform the additional testing. This prompted the inspectors to review additional GE SILs and licensee responses to ensure adequate actions were implemented.

Seven GE SILs issued between 1996 and 1998 were also reviewed. The licensee followed actions outlined in Administrative Control Procedure (ACP) 102.1, "Review of Industry Related Documents." The GE SILs were entered in the AR system for review and tracking purposes. The ARs were assigned to the appropriate individuals or groups and commitments that were made were tracked through implementation. The licensee properly addressed and implemented recommendations for the GE SILs and no discrepancies were noted.

Seven GE SILs issued between 1990 and 1992 were also reviewed. The inspectors identified a minor discrepancy in the licensee's response to GE SIL No. 514, "Back Connected Circuit Breaker Short Circuits," issued May 7, 1990. The GE SIL was issued to caution licensees that an electrical short could occur during the repair or reassembly of energized mounting studs associated with back connected circuit breakers. The licensee uses the same back connected circuit breaker described in the SIL in its reactor protection system power distribution panel 1Y30. The licensee committed to implement the GE SIL recommendations shortly after the GE SIL was issued. The licensee revised its molded case circuit breaker maintenance procedure in accordance

with the GE SIL recommendations by including torque values for the energized mounting stud bolts and nuts and added a procedural caution statement warning of the potential for damaging the inner insulator during reassembly. However, the inspectors identified that the licensee failed to include a gap tolerance check between the outer and inner insulator in the maintenance procedure. If the insulator gap is greater than the tolerance, this will increase the probability that an electrical short could result from the energized bar contacting the distribution panel. The licensee was not able to determine why the GE SIL recommendations were not entirely implemented.

The licensee explained that the mounting stud assembly is received from the vendor properly sized so that the outer and inner insulator fit snug during installation. Also, it is uncommon to disassemble and reassemble the energized mounting stud addressed in the GE SIL. Although the probability of an electrical short is increased if the insulator gap is greater than the recommended tolerances, the overall probability of an electrical short is low due to the infrequency of disassembling and reassembling the mounting stud and causing damage to the insulator.

Selected GE SIL recommendations were included in General Maintenance Procedure GMP-ELEC-14, "Molded Case Circuit Breakers," Section 5.4, "General Electric Circuit Breaker Installation." The electrical maintenance supervisor, upon further review, determined that the back connected circuit breaker and mounting stud were separate components and the mounting stud would not be removed if a breaker was installed; therefore, the GE SIL recommendations were not applicable to the breaker installation section. Action Request 98-1545 was initiated to resolve where in the maintenance procedure the GE SIL gap tolerance check should be added.

As detailed in NRC Inspection Report 50-331/98003(DRP), the inspectors identified wire interference concerns on several control rod drive hydraulic control units. This condition could have been prevented if the licensee had responded to GE SIL No. 3 which addressed this concern. This prompted the licensee to review its responses to the first 50 GE SILs issued. This review is currently in progress. The licensee plans to address any concerns noted, through its corrective actions program. The inspectors will continue to periodically review industry related documents to ensure that adequate actions are implemented.

c. Conclusions

The licensee adequately addressed industry issues described in GE SILs issued in the mid-1990's to the present by using its corrective actions program to ensure responses were adequate and properly implemented.

M8 Miscellaneous Maintenance Issues (92903)

M8.1 (Closed) Unresolved Item 50-331/98004-07: Reference use procedures meeting 10 CFR Part 50. In Inspection Report 50-331/97016, the inspectors documented a potential concern with modification work on the high pressure coolant injection system. The work package was not readily available at the job site. The licensee required the work package instructions to be "reference use" rather than "continuous use." The

licensee's procedure use and adherence procedure, ACP 101.01, treated many procedures as "reference use." Only surveillance and special test procedures were specified to be "continuous use." A reference use procedure was not required to be at the job site and steps (if in small segments) could be performed from memory and signed off at a later time. The inspectors were concerned that the licensee's procedure adherence policy may be too liberal given the large number of "reference use" procedures and the latitude given to personnel to perform steps out-of-sequence. However, no violation of NRC requirements was identified.

Since the time of the inspectors' concerns, there have been no further examples of events initiated or exacerbated by a procedure being categorized as "reference use." This item is closed.

III. Engineering

E1 Conduct of Engineering

E1.1 General Comments (37551)

The inspectors evaluated engineering involvement in the resolution of emergent material condition problems and other routine activities. The inspectors reviewed areas such as operability evaluations, root cause analyses, safety committees, and self-assessments. The effectiveness of the licensee's controls for the identification, resolution, and prevention of problems was also examined.

E1.2 Review of Outstanding Temporary Modifications (TMs)

a. Inspection Scope (37551)

The inspectors performed a review of outstanding TMs. Adequacy of safety evaluations, duration of the TMs, compliance with the TM procedure, and revisions to applicable drawings were checked. Licensee management's oversight of the process was also reviewed.

b. Observations and Findings

A review of outstanding TMs was conducted. Engineering evaluations and proposed corrective actions for the TMs were considered to be adequate. Only 2 of the 19 TMs were related to equipment important to safety.

However, the inspectors had a concern with oversight of the TM process. Of the 19 TMs in place, 2 were over 3 years old, 1 was 2 years old, and 4 were over 1 year old. The administrative control procedure (ACP) for TMs, ACP 1410.6, "Temporary Modification Control," stated that if a TM is initially extended (greater than 6 months), then plant manager approval was required prior to installation. None of the TMs greater than 6 months old had the plant manager's approval for installation

documented. The only procedural guidance for controlling the duration of a TM consisted of the responsible engineer coordinating maintenance or modification work to ensure TMs are resolved in a timely manner. Adequate control of TM duration was not evident.

Licensee management's administrative tool for maintaining oversight of TMs appeared adequate. The process consisted of the plant manager reviewing TMs in the "Quarterly Status of Equipment Issue Resolutions," prepared by the engineering manager. Relevant information is given on the TM such as resolution status, impact on system performance, safety impact, and age. However, it did not appear that sufficient attention was being given to the process.

The inspectors discussed the concern of the timely resolution of some of the TMs with the system engineering supervisor. The system engineering supervisor subsequently issued an action request that addressed the inspectors' concerns over the timeliness of resolving outstanding TMs. Several actions were developed with ARs to track progress efforts to ensure more timely resolution of future equipment issues. Some procedural enhancements have already been initiated.

The inspectors identified a discrepancy in the review of control room drawings. Temporary Modification 98-028 was not reflected in the drawings. The TM was associated with recorders of generator gross megavars. The project engineer identified a potential fire hazard with the original wiring in the recorders. The wiring was reconfigured. However, the inspectors identified that the corresponding drawing, M155-038, Sheet 2, did not reflect the actual plant configuration. The licensee immediately corrected the drawing to reflect the TM. The licensee, based on its initial investigation, determined that the markups had been made to Revision 18 of the control room drawing in May 1998. However, the current control room drawing, Revision 19, did not contain the required markups because when the Revision 18 drawing was replaced, the markups were apparently discarded with the drawing. The licensee's failure to maintain the drawings current constitutes a violation of minor significance and is not subject to formal enforcement action. Subsequently, the licensee performed a review of all TMs that required drawing markups. One other drawing discrepancy was identified and corrected.

c. Conclusions

The inspectors noted that the TMs in place had adequate safety evaluations and proposed engineering resolutions. There were no significant longstanding TMs in place for equipment important to safety. However, several of the TMs for nonsafety-related equipment were not being addressed in a timely fashion.

E2 Engineering Support of Facilities and Equipment

E2.1 Year 2000 (Y2K) Preliminary Readiness Assessment

a. Inspection Scope (37551)

The inspectors reviewed the status of the licensee's Y2K readiness project plan.

b. Observations and Findings

The licensee started its Y2K assessment program in the summer of 1996. Licensee personnel and contractors (Electronic Data System [EDS]) performed initial assessments of computer software. Software procurement procedures were developed and implemented to ensure that purchased software was Y2K ready or compliant, and, if not Y2K ready or compliant, an AR was written to track and resolve the problem. In the fall of 1997, licensee personnel began assessing Y2K issues in embedded systems. Based on its initial assessments, the licensee identified over 1100 individual components that warranted assessment and testing to ensure Y2K readiness. Currently, the initial assessment for embedded systems and software programs has been completed. Remedial efforts and testing are underway to ensure all software and embedded systems are Y2K ready or compliant. The Y2K assessment team consists of eight members from various disciplines dedicated full-time to addressing Y2K issues. An oversight committee consisting of members from operations, engineering, maintenance, and plant support departments meets periodically to assess the Y2K program status. Also, the licensee plans on conducting periodic meetings with the site vice president to provide Y2K program status updates.

The licensee was confident that all software and embedded systems would be Y2K ready by March 1999. Engineering personnel concluded that the plant's greatest vulnerability will be external to the plant, such as the possible loss of offsite power or the loss of telecommunications. The licensee was developing contingency plans to ensure that the plant operated safely independent of external vulnerabilities.

c. Conclusions

The licensee continued to effectively assess and test components and systems for Y2K computer software readiness. The licensee's goal was to be Y2K ready by March 1999.

IV. Plant Support

R1 Radiological Protection

R1.1 Daily Radiological Work Practices

a. Inspection Scope (71750)

The inspectors observed radiological worker practices during various maintenance activities detailed in this inspection report and also monitored radiological practices during daily plant tours.

b. Observations and Findings

Without exception, the inspectors observed that radiation protection technicians were actively involved at the job sites and were taking appropriate actions and performing surveys in accordance with good ALARA practices. No deficiencies were identified.

c. Conclusions

The inspectors concluded that radiological practices observed during maintenance activities and daily walkdowns were adequate.

R4 Staff Knowledge and Performance in Radiological Protection

R4.1 Radiological Protection Support for Radiography Activities

a. Inspection Scope (71750)

The inspectors observed radiological protection controls used for radiography operations that were conducted onsite August 26 and 27, 1998.

b. Observations and Findings

On August 26 and 27, 1998, with the support of radiation protection personnel, contractors performed radiography activities in the turbine building. The licensee provided an adequate prejob brief prior to the start of radiography activities. Radiation protection personnel effectively established and maintained control of the radiation and high radiation boundaries during radiography operations. The radiographer and assistant radiographer wore the proper dosimetry, which included an electronic dosimeter, a self-reading pocket dosimeter, an alarming rate meter, and a film badge. The licensee and contractor adequately used survey instruments to ensure the radioactive sealed source was in the shielded position after each radiographic exposure.

c. Conclusions

Radiation protection personnel provided effective support during radiography activities that were conducted by contractors on August 26 and 27, 1998. Adequate radiation area and high radiation area boundaries were established and controlled. Survey instruments were properly used to ensure that the radioactive sealed source was in its shielded position after each radiographic exposure.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on September 3, 1998. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Franz, Vice President Nuclear
G. Van Middlesworth, Plant Manager
R. Anderson, Manager, Outage and Support
J. Bjorseth, Maintenance Superintendent
D. Curtland, Operations Manager
R. Hite, Manager, Radiation Protection
M. McDermott, Manager, Engineering
K. Peveler, Manager, Regulatory Performance

INSPECTION PROCEDURES USED

IP 37551:	Onsite Engineering
IP 40500:	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
IP 61726:	Surveillance Observation
IP 62707:	Maintenance Observation
IP 71707:	Plant Operations
IP 71750:	Plant Support
IP 92901:	Followup - Operations
IP 92903:	Followup - Maintenance

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

50-331/98004-07	URI	Reference use procedure meeting 10 CFR Part 50

Discussed

None

LIST OF ACRONYMS USED

ACP	Administrative Control Procedure
ALARA	As Low As Reasonably Achievable
ANS	American National Standard
AR	Action Request
CFR	Code of Federal Regulations
CMAR	Corrective Maintenance Action Request
CRF	Comment Resolution Form
DAEC	Duane Arnold Energy Center
DRP	Division of Reactor Projects
GE	General Electric
IP	Inspection Procedure
IR	Inspection Report
ITS	Improved Technical Specification
LCO	Limiting Condition of Operation
LOCA	Loss of Coolant Accident
LT	Level Transmitter
NRC	Nuclear Regulatory Commission
RG	Regulatory Guide
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
RPS	Reactor Protection System
RWCU	Reactor Water Cleanup
TM	Temporary Modification
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
Y2K	Year 2000