Duane Arnold
1Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Feb 01, 2003
Identified By: Self Disclosing
Item Type: FIN Finding
INADEQUATE EVALUATION ON CONTINUED OPERATION OF THE 5B DUMP VALVE RESULTED IN A MANUAL REACTOR SCRAM
A finding of very low safety significance was identified through a self revealing event when the licensee failed to adequately evaluate the operation of the 5B low pressure feedwater heater dump valve. The continuous operation of the dump valve resulted in a failure of the deflector plate, which caused a condenser tube leak, and a subsequent reactor scram. The finding was more than minor, since it had an actual impact on safety and resulted in a reactor scram. This finding was determined to be of very low safety significance, since it did not impact any mitigating systems capability. No violation of USNRC requirements occurred.
Inspection Report# : 2003003*(pdf)*

Mitigating Systems

Significance: G Mar 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
THE LICENSEE FAILED TO VERIFY DESIGN PUMP SEAL FAILURE MECHANISMS IN A 10 CFR 50.59 EVALUATION TO ELIMINATE THE NEED FOR RHR PUMP COOLING.
A finding of very low safety significance was identified by the inspectors when the licensee failed to properly check the design adequacy in a safety evaluation that justified elimination of Residual Heat Removal (RHR) pump mechanical seal cooling. The licensee had not evaluated appropriate seal failure mechanisms. The finding was more than minor, since if left uncorrected, the lack of a program to monitor and clean the RHR mechanical seal heat exchangers could have resulted in the failure of the heat exchanger to provide cool water to the seals. This could have resulted in the failure of the seals during an accident. A failure of the mechanicalm seals would have resulted in a failure of the RHR pump. A NCV of 10CFR50, Appendix B, Criterion III, "Design Control," was identified for the failure to properly review the removal of the RHR mechanical seal cooling for design adequacy by the inspectors.
Inspection Report# : 2003003*(pdf)*

Significance: G Mar 01, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE CORRECTIVE ACTIONS FOR SOUTH EAST CORNER ROOMS DRAINS.
A finding of very low safety significance was identified by the inspectors when the licensee's corrective actions failed

to adequately address the degraded drains in the southeast corner room. The southeast corner room contains the "A" and "B" Residual Heat Removal Pumps and "A" Core Spray Pump. The corrective actions failed to address the debris that was on the room floor, which was sufficient to clog the drains. The finding was more than minor, since there was potential that the drain system would be clogged by the floor debris, which would result in the drain system being unable to remove water from the room, thereby potentially affecting the safety-related pumps in the room. The finding was determined to be of very low safety significance, since the licensee has portable pumps available to remove water from the room. A Non-Cited Violation (NCV) of 10CFR50, Appendix B, Criterion XVI, related to inadequate corrective actions was identified by the inspectors.
Inspection Report# : 2003003*(pdf)*

Significance: G Feb 02, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE DESIGN CONTROL ON DRYWELL FLOOR DRAIN SUMP SYSTEM.
A finding of very low safety significance was identified by the inspectors when the licensee failed to evaluate the effect of the filter socks on the design of the drywell floor drain sump system during normal plant operation. The filter socks became clogged in three of the six drains. The finding was more than minor, since there was potential that the remaining three drains could be clogged by debris, which would result in a significantly increased period of time for accumulated water from inside the drywell to over flow into the equipment sump and be measured as leakage. The finding was determined to be of very low safety significance, since other means remained available to detect an increase in unidentified leakage. A NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the failure to properly review the suitability of the drywell floor drain sump cover socks resulting in the delay of measured leakage from the drywell.
Inspection Report# : 2003003*(pdf)*

Significance: G Jan 04, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
INADEQUATELY PERFORMED CALIBRATION ON THE RCIC TURBINE GOVERNOR
A finding of very low safety significance was identified through a self-revealing event when the licensee failed to have an adequate procedure to perform the calibration of the Reactor Core Isolation Cooling (RCIC) turbine governor. The inadequate procedure resulted in an improper adjustment to the RCIC turbine governor gain and stability potentiometers which resulted in RCIC flow being below the Technical Specifications (TS) limit. The finding was more than minor since the finding resulted in increased unavailability of the RCIC system. The finding was determined to be of very low safety significance, since the licensee did not exceed the Allowable Outage Time (AOT) and High Pressure Coolant Injection (HPCI) was always available. A NCV of 10 CFR 50, Appendix B, Criterion V, related to the inadequate procedure for performing the RCIC turbine governor calibration was identified through a self-revealing event.
Inspection Report# : 2003003*(pdf)*

Significance: G Dec 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Seismic Evaluation on 1D1 Cell #53 Battery Jumper
A finding of very low safety significance was identified by the inspectors when the licensee failed to follow Administrative Control Procedure (ACP) 1203.01 "Design Verification" procedure and adequately evaluate the seismic qualification of the jumper cable around cell #53 of the "1D1" 125 Volts Direct Current (Vdc) battery. The inspectors

concluded that the issue was more than minor since the finding had greater safety significance than a similar issue described in IMC 0612, Appendix E, Section 4.a. The finding was determined to be of very low safety significance, since the licensee was able to show operability of the 1D1 battery. A Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion V, related to the failure to adequately perform ACP 1203.01 "Design Verification" procedure when evaluating the seismic qualification of the jumper cable around cell #53 of the 1D1 battery was identified by the inspectors.
Inspection Report# : 2002007*(pdf)*

Significance: G Dec 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate RCIC Troubleshooting Procedure
A finding of very low safety significance was identified by the inspectors when the licensee failed to adequately plan the procedure for filling and venting the Reactor Core Isolation Cooling (RCIC) lubricating oil system. The finding was more than minor since the finding resulted in increased unavailability of the RCIC system. The finding was determined to be of very low safety significance, since the licensee did not exceed the Allowable Outage Time (AOT) and High Pressure Coolant Injection (HPCI) was always available. A NCV of 10 CFR 50, Appendix B, Criterion V, related to inadequate procedure for filling and venting the RCIC lubricating oil system was identified by the inspectors. (Section 1R19)
Inspection Report# : 2002007*(pdf)*

Significance: G Aug 29, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Risk Assessment due to RCIC.
A finding of very low safety significance was identified by the inspectors when the licensee failed to perform an adequate risk assessment when the reactor core isolation cooling (RCIC) system was unavailable. The overall plant risk was actually yellow when identified as green by the licensee. The finding was more than minor since it involved a change in risk level from green to yellow and, if left uncorrected, would become a more significant safety concern. The finding was of very low safety significance since the high pressure core injection (HPCI) system was working as designed and the incremental core damage probability (ICDP) of having RCIC system unavailable for 12 days was 3E-7. An NCV of 10 CFR 50.65 (a)(4) was identified for the failure to properly perform an adequate risk assessment.
Inspection Report# : 2002006*(pdf)*

Significance: G Aug 06, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions RHRSW Strainer.
A finding of very low safety significance was identified by the inspectors when inadequate corrective actions resulted in a repeat event where algae growth was plugging the residual heat removal service water (RHRSW) strainers. The finding was more than minor since it impacted the operability of the RHRSW system. The finding was of very low safety significance because this event did not result in the flow of any of the RHRSW pumps to decrease below the Technical Specification (TS) 3.7.1 allowable minimum flow rate of 2040 gallons per minute (GPM). An NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," was identified for the failure to properly correct the algae buildup condition.
Inspection Report# : 2002006*(pdf)*

Barrier Integrity

Significance: G Feb 15, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE FUEL POOL COOLING SYSTEM PROCEDURE.
A finding of very low safety significance was identified by the inspectors when the licensee failed to have an adequate procedure for operating the fuel pool cooling system. The procedure failed to incorporate the new temperature limit associated with the installed Holtec fuel racks in the fuel pool, thereby allowing the licensing limit to be violated. The finding was more than minor since there was potential for criticality to occur in the fuel pool. The finding was determined to be of very low safety significance, since actual fuel pool temperature never reached 39.2 F, which would have violated the licensing limit bases. A NCV of 10CFR50, Appendix B, Criterion V, related to inadequate procedure for operating the fuel pool cooling system was identified by the inspectors.
Inspection Report# : 2003003*(pdf)*

Emergency Preparedness

Significance: G Nov 08, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to provide vision correction for respirator users
A Non-Cited Violation of 10 CFR 20.1703 (e) was identified for failing to provide for vision correction, when personnel used respiratory protective equipment. This was related to the emergency planning standards of 10 CFR 50.47(b) (10). The deficiency concerned a failure to implement a regulatory requirement (i.e. to provide equipment necessary to protect personnel or emergency workers). The licensee provided self-contained breathing apparatus (SCBA) equipment for all personnel who would be expected to respond in the event of an emergency. However, the licensee failed to provide vision correction lenses for some eyeglass wearing (i.e. non-soft contact wearing) emergency responders. Their ability to perform emergency response functions would have be impaired or hampered, due to inadequate vision correction while wearing SCBAs. Proper vision is required to ensure the capability of all emergency responders to provide emergency services under accident conditions, as required by the Duane Arnold Energy Center Emergency Plan.The finding was determined to be of very low safety significance because the majority of emergency response personnel that wore eyeglasses (i.e. non-soft contact wearing), had been issued vision correction lenses by the licensee. Additionally, an adequate number of SCBA qualified plant personnel/staff, which were designated emergency responders, (i.e. with no vision correction needed, wearers of soft contacts, or personnel with vision correction lenses) would have been available to respond in the event of an actual emergency. Therefore, the issue did not result in the failure to meet a planning standard
Inspection Report# : 2002007*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : May 30, 2003