NRC FORM 365 (4-95)

U.S. NUCLEAR REGULATORY COMMISSION

# EXPIRES 04/30/96 EXPIRES 04/30/96 RESPONSE TO COMPLY WITH TIME N REQUEST 50.0 HRS REPORT ON REQUEST 50.0 HRS REPORT THE INTO THE LICENSING PROCE OBDS MANAGEMENTS REGARD OBDS MANAGEMENTS REGARD APPROVED BY OMB NO. 3150-0104

# LICENSEE EVENT REPORT (LER)

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Haddam Neck

FACILITY NAME (1)

DOCKET NUMBER (2) 05000213

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TITLE (4)

Pinhole Leak on Inlet Valve to 'A' RHR Heat Exchanger

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(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On August 31, 1996, at 1050 hours, with the plant in Mode 5 (cold shutdown), a plant operator during a routine inspection identified a pinhole leak in the body of an eight inch inlet isolation valve (RH-V-791A) to the 'A' residual heat removal (RHR) heat exchanger. A small buildup of boric acid on the valve body was noted and when it was wiped off a small amount of water (<0.1 ml/min) weeped from the valve. In accordance with ASME Code Section XI guidance the valve was declared inoperable. At the time of this event the plant had been shut down since July 22, 1996 (LER 96-013-00) and was in a refueling and maintenance outage. The RHR system was inservice at the time of this event. Initial corrective action consisted of placing the 'B' RHR heat exchanger in service and isolating the 'A' RHR heat exchanger. The leak was in the neck area of the valve above the disc, the weeping stopped when the subject valve was closed. A radiographic examination of the valve was performed and no significant structural defects were identified. The status of residual heat removal valve RH-V-791A was dispositioned as operable but degraded and an ASME relief request was approved by the NRC. The reactor core was offloaded. Long term corrective action was to repair or replace the valve however these actions are no longer required due to the Haddam Neck plant being in a permanently defueled state.

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## BACKGROUND INFORMATION

During COLD SHUTDOWN and refueling operations the residual heat removal (RHR) system (EIIS Code:BP) maintains the reactor polant system (RCS) (EIIS Code: AB) at the appropriate temperature and also ensures that the boron concentration in the RCS will remain equalized. In this mode of operation one of two parallel RHR pumps take a common suction from the RCS loop 1 hot leg and discharges reactor coolant, via a common discharge line, to one of two full capacity tube and shell heat exchangers.

These heat exchangers have 8 inch gate valves (EIIS Code: ISV) to isolate both inlet and outlet flows. The coolant is then returned to the RCS loop 2 cold leg.

The RHR system is also used for post accident sump recirculation. When sufficient water is injected from the RWST to fill the containment sump, short term recirculation is entered. In this alignment, one residual heat removal (RHR) pump takes suction fium the sump and supplies water to the suction of one HPSI pump, which delivers water to two of the four cold legs. After a predetermined time has elapsed, two path recirculation is initiated. In this alignment, one RHR pump takes suction from the sump and supplies water to the suction of one charging pump, which delivers water at high pressure to the loop two cold leg. The RHR pump also supplies low pressure water directly to the upper reactor vessel head (core deluge).

## EVENT DESCRIPTION

On August 31, 1996, at 1050 hours, with the plant in Mode 5 (cold shutdown), a plant operator during a routine inspection identified a pinhole leak in the body of an eight inch inlet isolation valve (RH-V-791A) to the 'A' residual heat removal (RHR) heat exchanger. A small buildup of boric acid on the valve body was noted and when it was wiped off a small amount of water (<0.1 ml/min) weeped from the valve. In accordance with ASME Code Section XI guidance the valve was declared inoperable. At the time of this event the plant had been shut down since July 22, 1996 (LER 96-013-00) and was in a refueling and maintenance outage. The RHR system was inservice at the time of the event. Initial corrective action consisted of placing the 'B' RHR heat exchanger in service and isolating the 'A' RHR heat exchanger. The leak was in the neck area of the valve above the disc, the weeping stopped when the valve was closed.

# CAUSE OF THE EVENT

A radiographic examination of the valve was performed and no significant structural defects were identified.

A root cause evaluation relative to the valve's failure mechanism was to be performed. However in order to fully assess the cause of the crack the valve would have to be removed and sent to a laboratory. Subsequently due to Haddam Neck's decision to permanently cease power operation and permanently remove fuel from the reactor vessel, the evaluation will not be performed. No similar valves exist in any safety related system.

## SAFETY ASSESSMENT

This event was reported under 10CFR50.73(a)(2)(ii) as any event, found while the reactor was shut down, that, had it been found while the reactor was in operation, would have resulted in the plant, including its principal safety barriers, being seriously degraded.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

Assuming this was a previous existing condition, this event is also reportable under 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications. Technical Specification 3.5.1.a requires both trains of RHR operable in Modes 1,2 and 3.

Assuming this condition existed while the plant was in Mode 1, 2 or 3 and a design basis loss of coolant accident (LOCA) occurred, a leakage path outside of containment would have existed. However, the performance of the RHR system would not have been challenged due to the small magnitude of the leakage (<0.1 ml/min). In addition, the radiological consequence analysis for a large break LOCA assumes a total system leakage of 3 liters/hour which is much higher than the actual amount of the valve leakage.

Based on the above, the safety significance of this event is judged to be low.

# CORRECTIVE ACTION

The status of residual heat removal valve RH-V-791A was dispositioned as operable but degraded and an ASME relief request was approved by the NRC as documented in letter from Phillip F. Mckee (NRC) to Ted C. Fiegenbaum (NU) dated October 7, 1996. Withstanding the above, this supplemental report is issued to retract the originally proposed corrective actions to repair or replace the subject valve in light of the fact that the Haddam Neck plant is in a permanently defueled state.

#### ADDITIONAL INFORMATION

RHR system valve RH-V-791A is an 8" stainless steel gate valve Model No. 2216-SP manufactured by Aloyco (Crane).

The RHR system will be utilized during the decommissioning effort to perform decontamination of the Reactor Coolant System components and piping. RHR system valve RH-V-791A will be monitored or repaired commensurate with its intended service.

## PREVIOUS SIMILAR EVENTS

None.