PRIORITY ATTENTION REQUIRED MORNING REPORT - REGION I SEPTEMBER 20, 1994

Licensee/Facility:

New Hampshire Yankee
Seabrook 1
Manchester,New Hampshire

Notification:

MR Number: 1-94-0108
Date: 09/19/94
SRI

Dockets: 50-443
PWR/W-4-LP

Subject: Sensitized Stainless Steel Bolting in Service Water Pumps

Reportable Event Number: N/A

Discussion:

During the third refueling outage at Seabrook Station (April-July), divers in the cooling tower basin visually identified two corroded flange bolts on one service water pump. Both of these bolts, along with one from an ocean service water pump, were sent out for analysis. The metallurgical evaluation found that the pump column flange bolts were not properly solution annealed in accordance with the ASME SA-193 material requirements. The lack of proper heat treatment resulted in sensitization of the stainless steel bolt material. While the mechanical properties of the bolts were not adversely affected, the sensitization reduced the corrosion resistance of the material, particularly in an aqueous environment.

The pump manufacturer, Johnston Turbine Pumps, supplied all six service water pumps to Seabrook Station. Each cooling tower service water pump

has a total of 144 one-inch diameter SA-193, B8M bolts (six flanges with 24 bolts per flange), while each ocean service water pump has a total of 140 one-inch diameter SA-193, B8M bolts (seven flanges with 20 bolts per flange). The bolts in question were supplied by a distributor, California Nut and Bolt, with a Certificate of Compliance (versus a certified material test report, which would be required by the ASME Code for fasteners larger than one-inch in diameter) establishing the requisite documentation of compliance to the material specifications. The original bolt supplier to California Nut and Bolt is not known at the present time.

The licensee intends to initiate replacement of all the questionable bolts on the wetted flanges of all six service water system pumps after acceptable lot testing of the new bolt supply. The corrective maintenance activities may commence as early as September 27. Other licensee corrective actions include programmatic reviews of this issue for 10 CFR 21 and Nuclear Network reporting, and evaluation of other bolting supplied by California Nut and Bolt to Johnston Pumps. The licensee is also evaluating other equipment repairs conducted during the outage for similar corrective response concerns. The licensee also intends to submit a voluntary LER to the NRC to further discuss and document this problem.

Regional Action:

The resident inspectors are assessing the continuing licensee evaluati

ons
and plans for corrective actions. The NRR project manager is onsite, has
been briefed on this issue and has informed the Vendor Inspection Bran ch,

relative to generic concerns. NRC inspection of the corrective

maintenance/bolt replacement activities is planned.

Contact: John Rogge (610)337-5146
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PRIORITY ATTENTION REQUIRED MORNING REPORT - REGION I NOVEMBER 3, 1 994

Licensee/Facility:

New Hampshire Yankee
Seabrook 1
Manchester,New Hampshire

Notification:

MR Number: 1-94-0123
Date: 11/02/94
SRI E-MAIL

Dockets: 50-443
PWR/W-4-LP

Subject: UPDATE TO MR 1-94-0108: SENSITIZED STAINLESS STEEL BOLTING IN

SERVICE WATER PUMPS

Reportable Event Number: 27973

Discussion:

Based on two severely degraded cooling tower pump column bolts, North

Atlantic performed an operability evaluation for the service water pum ps
and established an aggressive repair plan to remove all six service wa ter
pumps, one at a time, to inspect and replace all pump bolting. The NR C
reviewed the operability evaluation and repair plan and determined tha

t
the licensee's corrective actions were commensurate with the safety

significance of the issue. Inspection of the four service water ocean

pumps (SW-41-A,B,C,D) last month revealed no severely degraded bolts.

Several column flange bolts were identified to have minor degradation
due
to intergranular corrosion.

On 11/1/94, North Atlantic removed the "A" service water cooling tower

pump (SW-P-110A) to inspect and replace all existing bolting due to

potentially severe degradation from a intergranular corrosion mechanis
m.
Of 112 total submerged pump column bolts 45 bolts (40% of the total

population) were severely degraded (12 bolts broke during removal). Th
e
operators immediately declared the "B" cooling tower pump inoperable

placing the plant in a 72 hour shutdown limiting condition for operati
on
(LCO) based on the condition of the "A" pump.

The maintenance staff replaced SW-P-110A with a rebuilt pump that had
all
new bolting. Following completion of the pump head curve verification

and operability surveillance tests, the operators returned the pump to
 an
operable status on 11/2. At that time, the 72 hour LCO was exited;

however, the plant will maintain the 7 day LCO entered on 10/30/94 at

11:38 pm for SW-P-110A until the "B" cooling tower pump bolting is

corrected. North Atlantic has committed to submit a final report to t
he
NRC regional office to explain the failure mechanism and the bolt

supplier implications.

Regional Action:

The resident inspectors observed the service water pump work to date, including visual examination of bolting on each pump. The NRR project manager is aware of the issue and has informed the Vendor Inspection Branch, relative to generic concerns. The severe bolt degradation see ms
to be limited to the cooling tower environment. The licensee is not planning on making a press release.

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