

Licensee/Facility:

Notification:

Northeast Utilities
Millstone 1
Waterford, Connecticut

MR Number: 1-94-0029
Date: 03/22/94
RI PC

Dockets: 50-245
BWR/GE-3

Subject: CONTROL ROD LIFE REDUCTION

Reportable Event Number: N/A

Discussion:

On March 16, 1994, General Electric informed Millstone Unit 1, that the expected service life of Duralife Model 120 and 140 control rods would have to be reduced because of unexpected crevice corrosion cracking.

According to General Electric, the crevice corrosion cracking was detected during hot cell testing of various model Duralife control rods during the 1990 time period. The cracking affects the outer edge tubes in the control rods due to restricted coolant flow inside the bend radius of the control rod sheath. The crevice corrosion cracking is expected to reduce the depletion worth of the rods from 48 percent to 34 percent. The rod worth depletion will reduce the shutdown margin in a reactor core if the depletion limit is exceeded.

Currently, Millstone Unit 1 has determined that only one Duralife model 140 control rod will exceed its depletion worth during the forthcoming operating cycle. The licensee has received a bounding analysis from

General Electric that has concluded that the revised shutdown margin will be reduced from 1.2 percent delta K to one percent delta K. The shutdown margin required by plant technical specification limit is 0.33 percent delta K. Therefore, the reduction in shutdown margin is not currently a safety issue at Millstone 1.

General Electric may issue a Service Information Letter (SIL) to inform other licensees who use Duralife control rods of the potential for a loss of shutdown margin.

Regional Action:

None

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