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Docket Number 50-346

License Number NPF-3

Serial Number 1990

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United States Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Subject: License Amendment Request to Revise Technical Specification
5.3.1, Fuel Assemblies: Additional Information

Gentlemen:

In anticipation of the need to conduct fuel repair activities during the Davis-Besse Nuclear Power Station (DBNPS) Seventh Refueling Outage (7RFO), Toledo Edison submitted a License Amendment Request (LAR) to revise the Fuel Assembly (FA) description in Technical Specification 5.3.1 (reference letter Serial Number 1924 dated May 31, 1991). In subsequent meetings with the NRC staff on August 14 and 21, 1991, Toledo Edison agreed to provide supplemental information relative to the LAR. A followup letter (reference letter Serial Number 1976 dated August 29, 1991) provided the supplemental information. This letter provides additional information as requested by the NRC Staff in phone calls earlier this month. As a result of the FA inspection and repair activities described below, Toledo Edison is pleased to have met its objective of beginning the upcoming Cycle 8 with no known fuel defects.

Ultrasonic Testing (UT) was performed on all FAs intended to be reinserted for Cycle 8. Eleven FAs which were to be discharged, but which were potential substitute candidates, were also tested. Five FAs scheduled for reinsertion were found to have one defective fuel pin each. Three of these five FAs are from Batch 8 (initially inserted in Cycle 6). The other two FAs are from Batch 9 (initially inserted in Cycle 7). The Batch 9 FAs have design features which allow defective pin replacement. The Batch 8 FAs do not have those features.

By inserting eleven FAs which were originally intended to be discharged, and shuffling the core, the three Batch 8 FAs and one of the Batch 9 FAs were replaced.

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Operating Companies
Cleveland Electric Illuminating
Toledo Edison

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The remaining Batch 9 FA had a defective fuel pin in a location adjacent to a control rod guide tube. This FA was reconstituted by removing the upper end fitting, extracting the defective fuel pin, moving an adjacent fuel pin into the location vacated by the defective fuel pin, inserting a solid stainless steel (SS) filler rod into the location vacated by the good pin, and then replacing the upper end fitting. The attached Figure 1 shows the location of the SS filler rod in the FA and the location of the FA in Cycle 8. The resulting configuration has the SS pin surrounded by heated rods (i.e., there are no adjacent cold walls). As discussed in the above-mentioned previous meetings with the NRC Staff, this FA configuration does not require any critical heat flux (CHF) penalties. The channels with the SS pin and surrounding fuel pins are not the lead channels for power generation in this FA. The minimum thermal margin for this FA will be greater than 5 percent relative to the lead power generation FAs in the core.

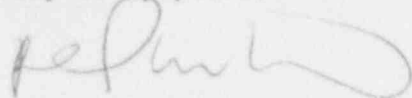
The cycle-specific vendor analyses to support the Cycle 8 redesign are underway. Preliminary results show that the existing Reload Report conclusions will remain bounding. The cycle-specific analyses will further verify that acceptable safety margins are maintained. Conformance to existing design criteria and safety analysis limits will be confirmed. The attached Figure 2 shows the core map for Cycle 8.

The failure mechanism for the five defective fuel pins is not presently known. Grid fretting is the likely failure cause for the three Batch 8 FAs. Based on visual observation, grid fretting did not appear to be the cause of failure of the defective rod which was pulled from the reconstituted FA. Any followup investigation of fuel defect causes will be controlled under the DBNPS fuel integrity program.

The fuel shuffle for Cycle 8 has been completed, and Mode 5 was entered on October 9, 1991. Toledo Edison requests that the NRC process the LAR in an expeditious manner to avoid a delay in the startup of the DBNPS from 7RFO.

If you have any further questions regarding the amendment request, please contact Mr. Robert W. Schrauder, Manager - Nuclear Licensing, at (419) 249-2366.

Very truly yours,

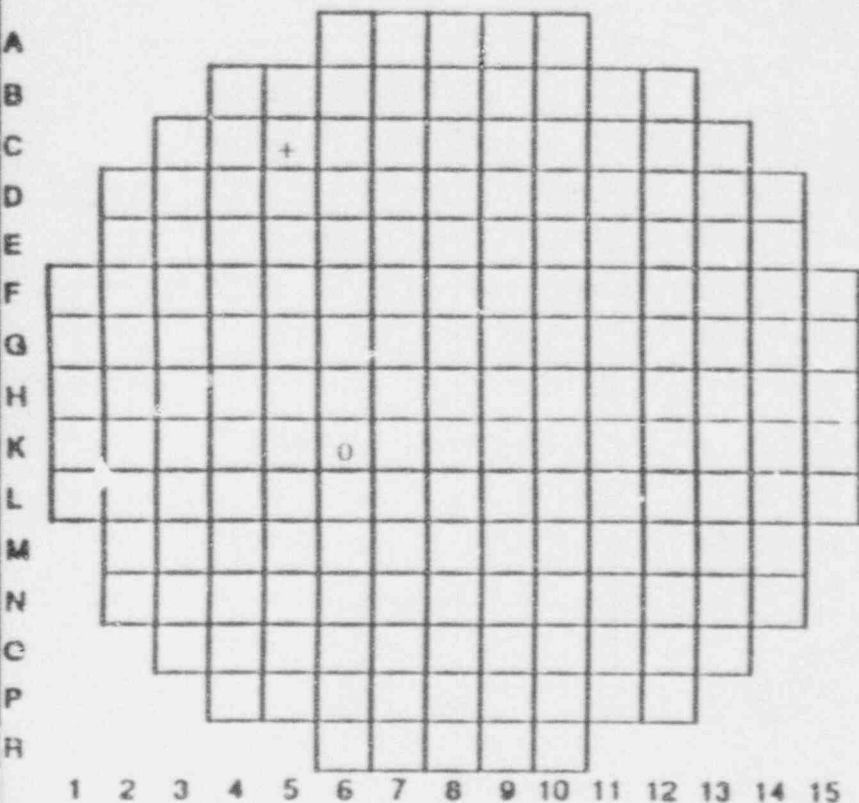


MKL/dlm

cc: A. B. Davis, Regional Administrator, NRC Region III
J. B. Hopkins, NRC Senior Project Manager
W. Levis, DB-1 NRC Senior Resident Inspector
J. R. Williams, Chief of Staff, Ohio Environmental Management
Agency, State of Ohio (NRC Liaison)
Utility Radiological Safety Board

ASSEMBLY NJ0542
 BATCH 9
 RECONSTITUTABLE

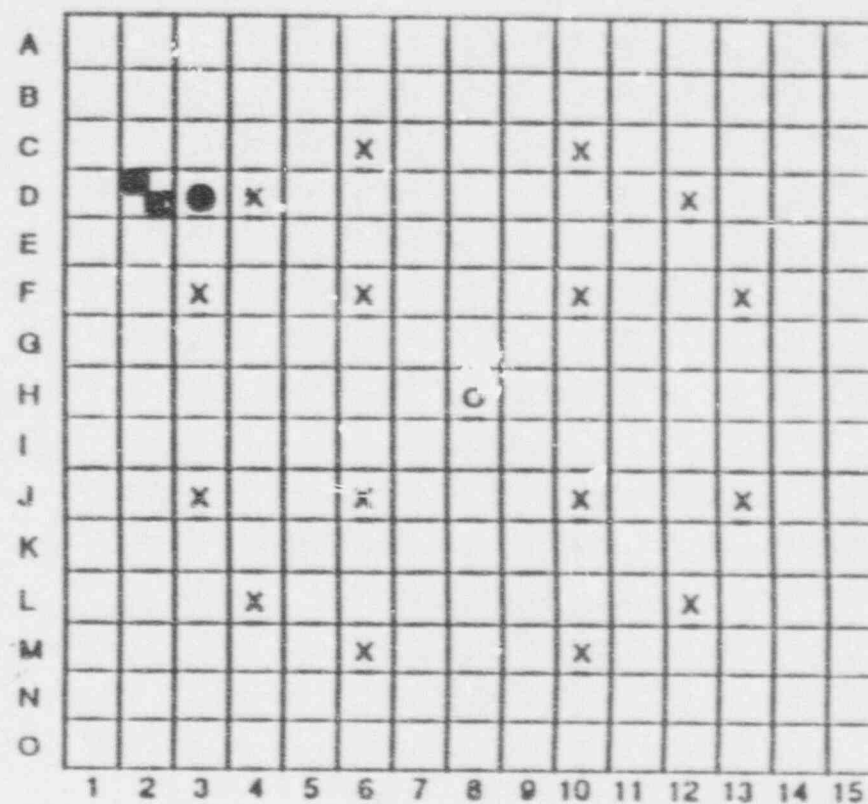
Core Map



O Cycle 7 Location
 + Cycle 8 Location

← North

Fuel Assembly Map

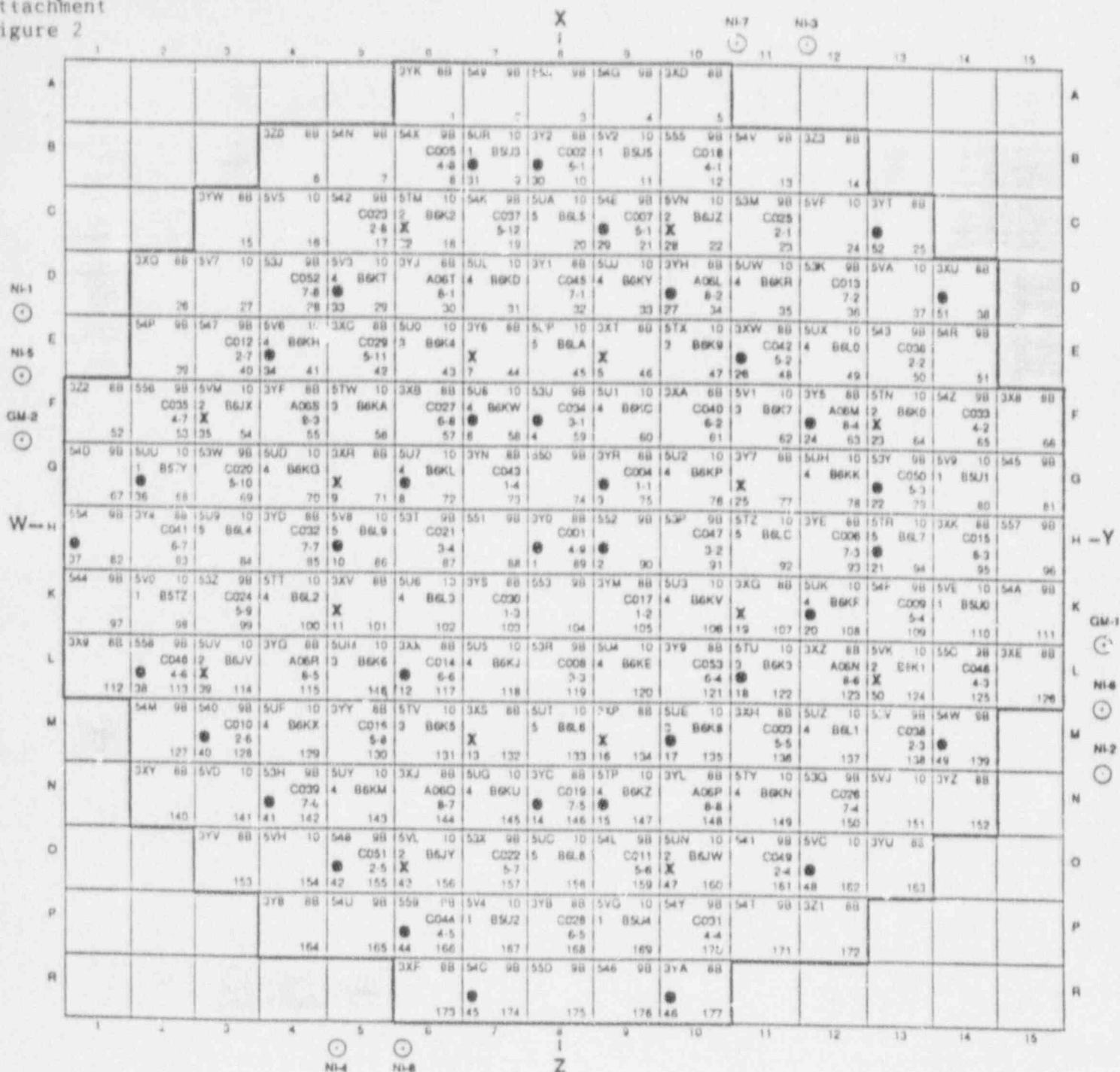


O Instr. Tube
 x Guide Tube

● LOCATION WHICH HAD DEFECTIVE PIN
 ■ LOCATION CONTAINING SS FILLER ROD

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 Attachment
 Figure 2

DAVIS-BESSE UNIT 1, CYCLE 8



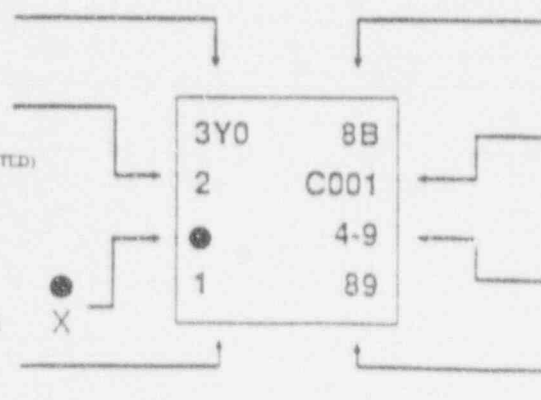
NORTH

FUEL ASSEMBLY ID:
 ALL ID'S PREFIXED
 BY "NO"

B/PRA INITIAL
 ENRICHMENT
 1 = 0.2 W% (REINSERTED)
 2 = 1.1 W%
 3 = 1.4 W%
 4 = 1.7 W%
 5 = 2.0 W%

INCORE DETECTOR
 SYMMETRIC DETECTOR

INCORE DETECTOR
 STRING NUMBER



FUEL ASSEMBLY BATCH ID:
 88 (37) BURNED TWICE
 98 (36) BURNED ONCE
 10 (64) NEW FUEL 3.2% ENRICHED

CONTROL COMPONENT ID AND TYPE:
 A = A/PRA
 B = B/PRA
 C = CRA

CONTROL COMPONENT GROUP - ROD

COMPUTER ASSIGNED
 ASSEMBLY NUMBER