TMIPO HQ r/f
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CENTRAL FILE
NRC PDR
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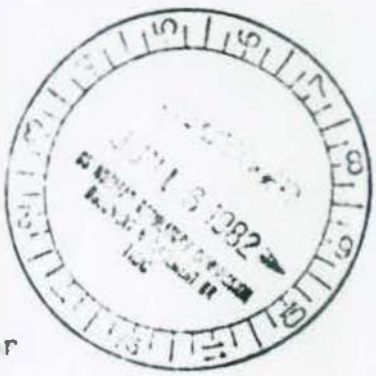
Site Operations
File

June 7, 1982
NRC/TMI-82-036



MEMORANDUM FOR: Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Bernard J. Snyder, Program Director
TMI Program Office

FROM: Lake H. Barrett, Deputy Program Director
TMI Program Office

SUBJECT: NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

Enclosed is the status report for the period of May 24, 1982 to June 4,1982. Major items included in this report are:

-- Liquid Effluents

-- NRC and EPA Environmental Data

-- Radioactive Material and Radwaste Shipments

-- Submerged Demineralizer System Status

-- EPICOR II

-- Reactor Coolant System Water Processing

-- Reactor Building Entry

-- Groundwater Monitoring

-- Purification Demineralizer Disposal

-- EPICOR II Prefilter Inerting Tool Status

-- Public Meetings

Original signed by
Lake H. Barrett

Lake H. Barrett
Deputy Program Director
TMI Program Office

Enclosure: As stated

OFFICE ▶						
NAME ▶						
DATE ▶						

NRC FORM 318 (10-80) NRCM 0240

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DATE ▶	6/7/82	6/ /82	6/ /82	6/ /82	6/ /82	6/ /82

NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

May 29, 1982 - June 5, 1982

Plant Status

Core Cooling Mode: Heat transfer from the reactor coolant system (RCS) loops to reactor building ambient.

Available Core Cooling Modes: Decay heat removal (DHR) systems, Mini OHR (MDHR) system.

RCS Pressure Control Mode: Standby pressure control (SPC) system.
NOTE: During Reactor Coolant System feed and bleed, pressure will be maintained with a Reactor Coolant Bleed Tank Pump. Automatic back up pressure control will be provided by the standby pressure control system.

Backup Pressure Control Modes: MOHR and OHR system.

Major Parameters (as of 0500, June 4, 1982) (approximate values)
Average Incore Thermocouples: 97°F
Maximum Incore Thermocouple: 125°F

RCS Loop Temperatures:

	A	B
Hot Leg	94°F	96°F
Cold Leg (1)	88°F	80°F
(2)	90°F	83°F

Pressure: 69 psig
NOTE: During reactor coolant system feed and bleed, pressure is maintained at approximately 70 psig.

Reactor Building: Temperature: 70°F
Pressure: -0.8 psig
Airborne Radionuclide Concentrations:
9.7 E-8 uCi/cc H^3
(sample taken 6/1/82)
6.0 E-6 uCi/cc Kr^{85}
(sample taken 6/1/82)
1.6 E-9 uCi/cc particulates
(sample taken 6/3/82)

1. Effluent and Environmental (Radiological) Information

Liquid effluents from the TMI site released to the Susquehanna River after processing, were made within the regulatory limits and in accordance with NRC requirements and City of Lancaster Agreement dated February 27, 1980.

During the period May 28, 1982, through June 3, 1982, the effluents contained no detectable radioactivity at the discharge point although individual effluent sources which originated within Unit 2 contained small amounts of radioactivity. Calculations indicate that less than seven-hundredths (0.07) of a curie of tritium was discharged.

2. Environmental Protection Agency (EPA) Environmental Data

-- The EPA Middletown Office has not received the environmental Kr-85 analytical results for the samples which were taken April 16, 1982, through May 21, 1982, from the EPA's Counting Laboratory at Las Vegas, Nevada. These results will be included in a subsequent report.

-- No radiation above normally occurring background levels was detected in any of the samples collected from the EPA's air and gamma rate networks during the period from May 26, 1982 through June 3, 1982.

3. NRC Environmental Data

Results from NRC monitoring of the environment around the TMI site were as follows:

-- The following are the NRC air sample analytical results for the onsite continuous air sampler:

Sample	Period	I-131 (uCi/cc)	Cs-137 (uCi/cc)
HP-321	May 26, 1982 - June 2, 1982	<6.6 E-14	<6.6 E-14

4. Licensee Radioactive Material and Radwaste Shipment

-- On Tuesday, June 1, 1982, two drums containing samples of Unit 1 steam generator tubes were shipped to Babcock and Wilcox, Lynchburg, Virginia.

-- On Tuesday, June 1, 1982, one drum containing samples of Unit 1 steam generator tubes was shipped to the Battelle Columbus Laboratory, West Jefferson, Ohio.

Major Activities

1. Submerged Demineralizer System (SDS). Processing of the first batch (approximately 50,000 gallons) of reactor coolant system (RCS) water was completed on May 29, 1982. SDS processing parameters during the batch are shown in Attachment I.

2. EPICOR II. The EPICOR II system is shutdown because no water is ready for processing.

3. Reactor Coolant System (RCS) Feed and Bleed. The second feed and bleed cycle of the RCS commenced on June 1, 1982, and was completed on June 4, 1982. The RCS samples taken prior to and during the cycle are shown in Attachment II.

4. Reactor Building Entry. Weekly reactor building entries are continuing to support the scheduled Axial Power Shaping Rod (APSR) insertion and the control rod drive lead screw removal. The APSR insertion is scheduled for late June 1982 and the lead screw removal and closed circuit television inspection of the upper reactor vessel internals is scheduled for mid July 1982.

   There are eight APSR's in the TMI-2 core. The APSR's have the same physical appearance and dimensions as the 61 control rods in the core (see Attachment III). However, the neutron absorption section in the APSR's is only 36 inches long and is used to regulate power distribution in the core during power operation. During an automatic reactor shutdown, the eight APSR's are designed to remain in position while the 61 control rods (134 inch neutron absorption section) are inserted into the core to stop the nuclear chain reaction. Following the automatic reactor shutdown on March 28, 1979, the APSR's remained withdrawn about 35 inches from the bottom of the core.

   The scheduled APSR insertion in June is a prerequisite for normal APSR uncoupling from the rod drive mechanisms. The uncoupling of all rods is necessary for reactor head removal. Following uncoupling, the reactor vessel head can be removed along with the control rod drive mechanisms while the control rods remain inserted in the core. During the scheduled APSR insertions, sonic and electronic monitors will be used to evaluate the resistance to the movement of the APSR's. The results will be used as preliminary data to determine the physical condition of the TMI-2 core.

5. Groundwater Monitoring. Water samples taken in April 1982 from 13 groundwater monitoring locations (test borings) indicate that tritium concentrations in the TMI groundwater have remained in the same range as reported in previous Weekly Status Reports. The monitoring locations in the vicinity of the borated water storage tank (BWST) continue to show the increased tritium levels which were first identified in January 1982 after a leak was discovered from the BWST. Based on samples taken in April 1982, test boring 16 and 17 contained the highest tritium concentrations, 670,000 pCi/L and 824,000 pCi/L, respectively.

Gamma scans on samples taken in February and March 1982 have not identified any gamma emitting isotopes in the groundwater. Composite samples taken during the last quarter of 1981 from test borings and the east dike catch basin were analyzed for strontium 89 and 90. The analyses indicated that the strontium isotopes were below the lower limit of detection.

6. Purification Demineralizer Disposal. Preparations are being made by GPU and DOE for the eventual removal and disposal of two reactor coolant system letdown purification demineralizers. The 4 ft. diameter, 7 ft. high, stainless steel vessels contain up to 50,000 curies of mixed fission products which were deposited on the organic ion-exchange resins during the March 29, 1979 accident. Initially, characterization work will be performed to determine both the external conditions in the auxiliary building demineralizer cubicles and the internal conditions of the ion exchange vessels. The characterization will include analyses of gases, liquids and analyses of the resins. Potential methods being considered for removing these waste materials include: (1) sluicing the resins into a special shipping container, (2) chemically dissolving the ion exchange media followed by sluicing and solidification, and (3) removal of the intact demineralizer vessel and placement into a special shipping cask. The removal method selected will be based on the amount of radiation and thermal degradation that the resins experienced. The actual shipment of these two purification demineralizers to a DOE facility is anticipated to occur in 1983.

7. EPICOR II Prefilter Inerting Tool Status. As previously highlighted in the February 1, 1982 Weekly Status Report, a remotely operated inerting tool was delivered to GPU for functional testing in preparation for shipment of the 49 EPICOR II prefilters (PF). This special TV monitored inerting tool, which was designed and built by the DOE (Idaho National Engineering Laboratory, INEL) to remotely sample and purge the EPICOR II PF's is currently being tested at TMI with a simulated EPICOR PF liner. The functional test integrates the inerting tool with the support systems and hardware including the concrete blockhouse, remote support facility, ventilation system and effluent monitors.

For actual EPICOR PF shipment preparations, the licensee plans to perform all inerting operations at the solid waste storage facility (SWSF) in the individual cells where the PF liners are presently stored. The inerting tool will be used; (1) to remove and insert the threaded vent plug on liner process parts, (2) to draw samples of the gases contained in the liners, (3) to purge the liner of contained gases, and (4) to inert the liners with nitrogen gas. All operations will be done remotely under a concrete blockhouse which will replace the existing cell shielding lid. The first EPICOR II prefilter inerting is tentatively scheduled to begin in early July. After inerting and leak testing, the liners will be shipped to INEL in standard type "B" shipping casks which are designed to withstand transportation accidents.

Past Meetings

On May 28, 1982, Lake Barrett met with the Concerned Mothers group to discuss various TMI related issues.

On June 4, 1982, a meeting was held with Lake Barrett, NRC; Messrs. Robert Arnold, President of GPU Nuclear; Bill Gifford, Vice President of Communications, GPU Nuclear; and a group of Concerned Mothers to discuss the financial difficulties that are hindering the progress of the Unit 2 cleanup.

ATTACHMENT I

SDS PERFORMANCE FOR BATCH NUMBER 27
(Reactor Coolant System Water)

Radionuclide	Average Influent (uc/ml)	Average Effluent (uc/ml)	Average DF
Cesium 137	9.5	8.4×10^{-4}	1.1×10^{4}
Strontium 90	9	4.7×10^{-2}	2×10^{2}

ATTACHMENT II

RCS Feed and Bleed of 50,000 Gallons
Start 6/1/82 - Stop 6/3/82

Date	Time	Cs-137 (uc/ml)	Sr-90 (uc/ml)	Sb-125 (uc/ml)	Turbidity (NTU)*
5/24	1000	5.9	10	$<5.5 \times 10^{-2}$	--
6/1	1030	7.6	11	$<1.0 \times 10^{-1}$	--
6/2	0200	7.5	13	$<7.4 \times 10^{-2}$	20
6/2	0930	7.1	13	$<1.0 \times 10^{-1}$	21
6/2	2040	4.9	13	$<5.8 \times 10^{-2}$	16
6/3	1000	4.8	8.0	$<2.5 \times 10^{-2}$	15
6/3	2130	3.7	11	$<2.2 \times 10^{-2}$	14

*Nephelometric Turbidity Units - An empirical measure of turbidity based on measurement of the light-scattering characteristics (Tyndall effect) of the particular matter in the sample.

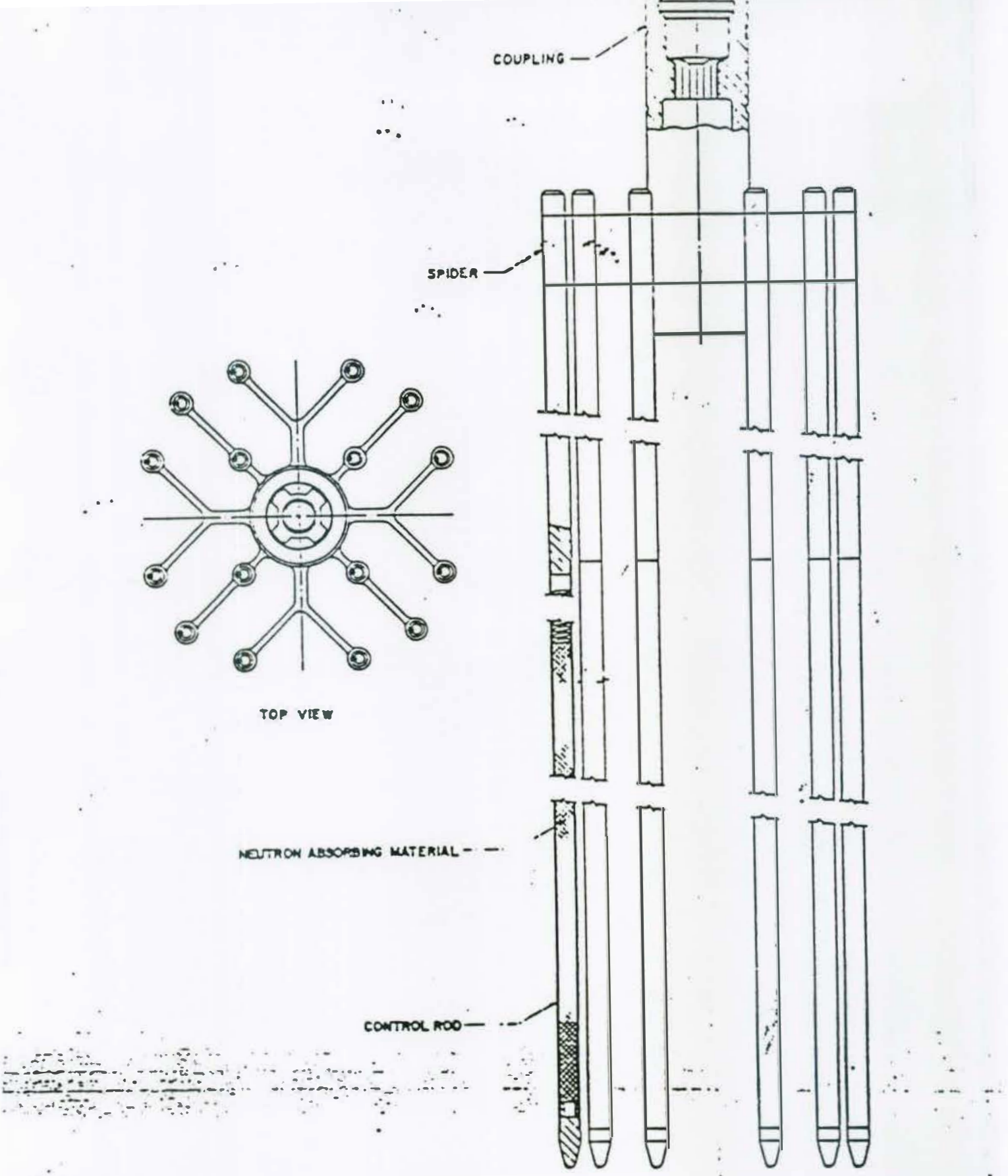
ATTACHMENT III

CONTROL ROD ASSEMBLY DATA

Item	Data
Number of CRAs	61
Number of control rods per assembly	16
Outside diameter of control rod, in.	0.440
Cladding thic ness, in.	0.021
Cladding material	304 SS, cold-worked
Eng plug material	304 SS, annealed
Spider material	SS grade CF3M
Poison material	80% Ag, 15% In, 5% Cd
Female coupling material	304 SS, annealed
Length of poison section, in.	134
Stroke of control rod, in.	139

AXIAL POWER SHAPING ROD ASSEMBLY DATA

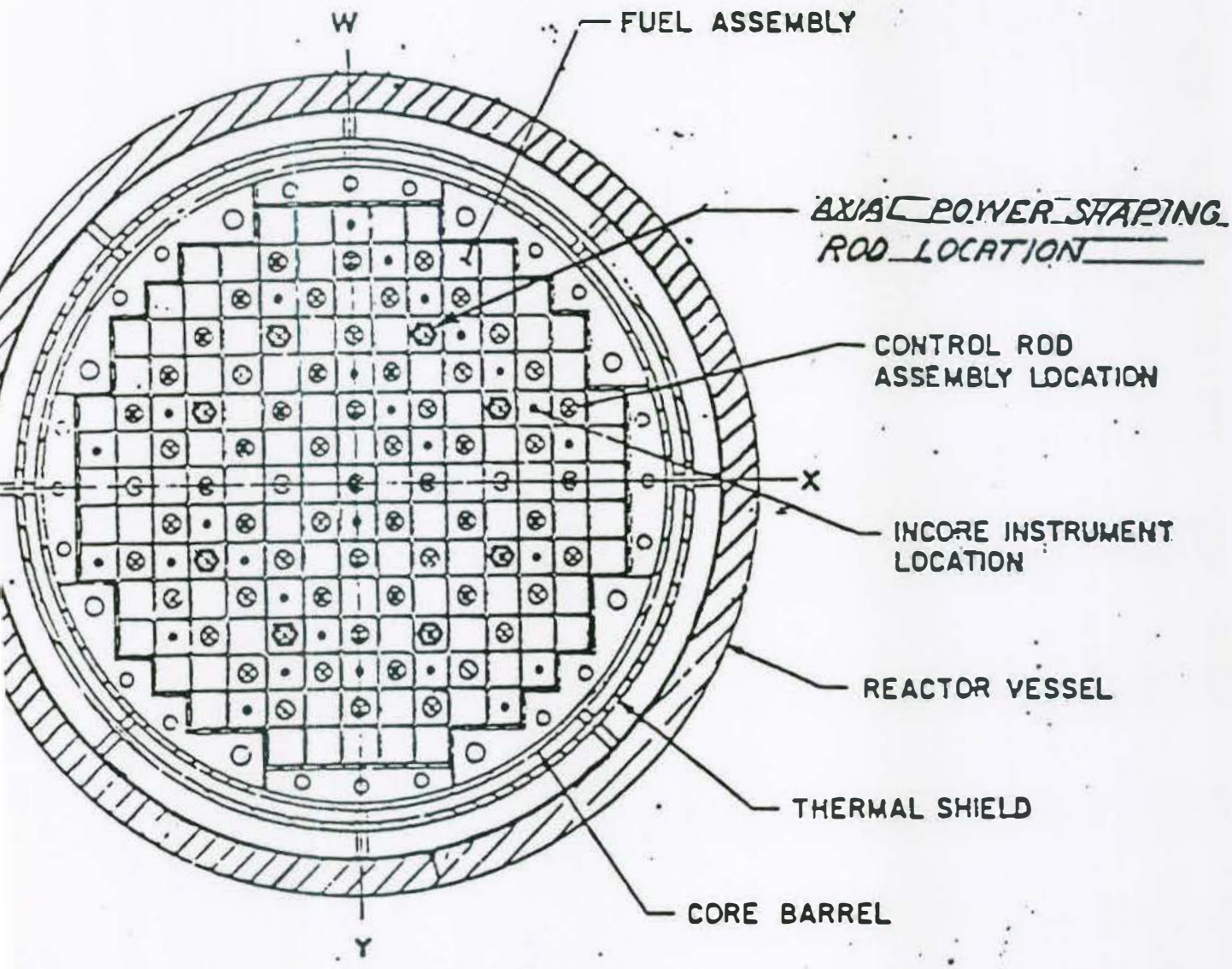
Item	Data
Number of APSRAs	8
Number of APSR/assy	16
OD of APSR, in.	0.440
Cladding thickness, in.	0.021
Cladding material	304 SS, cold-worked
Plug material	304 SS, annealed
Poison material	80% Ag, 15% In, 5% Cd
Spider material	SS, grade CF3M
Female coupling material	304 SS, annealed
Length of poison section, in.	36
Stroke of APSR, in.	139



CONTROL ROD ASSEMBLY

THREE MILE ISLAND NUCLEAR STATION U

ATTACHMENT III



Reactor Vessel & Internals Cross Section