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MEMORANDUM TO FILE

FROM: EDWARD ABBOTT, TECHNICAL ASSISTANT TO COMMISSIONER GILINSKY

SUBJECT: NOVEMBER 1, 1982, VISIT TO THE TMI SITE

INTRODUCTION

On November 1, 1982 Commissioner Gilinsky and I visited the TMI site. Prior to going to the site, we met with Lake Barrett, Deputy Director of the TMI Program Office and Richard Conte, the Senior Resident Inspector for TMI Unit 1 to discuss changes in the agenda (Attachment 1). The tour of Unit 1 was moved from the afternoon to the morning.

We arrived at the site's observation center at 8:30 a.m. and met Robert Arnold, President of GPU Nuclear, Henry Hukill, Vice-President of Unit 1, Ed Wallace, Unit 1 licensing manager, Mike Ross, Unit 1 Operations Manager. Robert Pollard of the UCS, and Judith Johnsrud of ENCP. A member of GPU security briefed us on the procedures for entering the plant. We began the tour of Unit 1 in the turbine building.

UNIT 1 TOUR

We entered the Unit 1 turbine building through the service building and went to the steam generator mockup. Mr. Conte briefly described the tube repair procedure. Mr. Arnold summarized the results of the first attempts at explosive expansion of 300 tubes in the A steam generator and 150 tubes in the B steam generator. After expansion eddy current and profilometer testing, 9 tubes showed indications of cracks in the B steam generator and 3 in the A steam generator. About 30,000 tubes need expansion and production will start as soon as the results of first attempts are evaluated. About 800 tubes need plugging and 300 have been done so far. The average radiation level in the steam generators is less than 1 rem/hr and the repair has required 300 man-rem thus far. The prime contractor for the repair is Babcock & Wilcox with Foster Wheeler as a subcontractor for the explosive expansion of the tubes. GPU has

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established an independent review group to evaluate the repairs.

We left the turbine building and entered the intermediate building where we proceeded to the emergency feedwater pump rooms. There are two motor driven feed pumps powered from emergency buses and one steam driven feed pump. Feedwater flow to the steam generators is controlled with an air operated valve driven by air from three different air supplies. A safety grade acoustic monitor is used to measure flow. These modifications were made to comply with Commission requirements for emergency feedwater systems. This system is not safety grade as it is not separate from the Integrated Control System and the electrical equipment is not environmentally qualified for a steam line break.

The post-accident monitoring and sampling systems were discussed while we were in the intermediate building. The panels and equipment are installed but have not been completely tested. GPU expects these TMI modifications to be completed by the end of December, 1982.

From the intermediate building we went to the diesel generator buildings. TMI has two 3 MW diesel generators, each connected to a safety-related bus. The licensee pointed out the back up air supply and safety grade feedwater flow instrumentation for the auxiliary feedwater system.

The next area toured was the control building. The Operations Support Center, which would serve as the control center for in-plant recovery work in the event of an accident, is in the same room as the radiation chemistry labs. The room appeared small but the licensee said it was big enough and that if the room became crowded, people could stand in the hallway. On the way back to the intermediate building we passed by a containment purge line. TMI has no license restriction on the number of hours it can purge the containment. Such a restriction, however, is common on many other PWR's. The purge valves are pinned to prevent opening of the valves beyond 30 or 40 percent of the full open position.

In the basement of the auxiliary building, we discussed the remote operators for the decay heat removal system and the leakage control program for the fluid systems in the building. The remote operators for the filter bypass for seal injection to the reactor coolant pumps and the decay heat supply for the pressurizer spray are not scheduled for completion prior to startup. The procedures for the leakage program have been written and some of the tests have been completed. The rest of the procedures will have to wait until plant conditions during startup are known.

The rest of the tour of Unit 1 was spent in the Technical Support Center and the Control Room. The TMI-1 TSC is located in the same room as the remote shutdown panel and the reactor coolant pump logic panels. The room is very small and will accommodate about five engineers.

We walked down the panels in the control room, discussed the bypassing of the high pressure injection system and observed the operation of the offsite dose calculator. Two TMI Action Plan items that will not be completed prior to startup are the reactor coolant system high point vents and the reactor water level indicator. Much of the electrical work for the vent modification is complete and the hardware is on-site. The reactor water level indicator for TMI has not been designed. Mr. Ross demonstrated the computer display to be used by the operators to assess the plant's condition. He also obtained a printout of the in-core thermocouple readings.

The off-site dose calculator was used to calculate off-site doses using current meterological conditions and assumed source terms. Commissioner Gilinsky noticed that the calculated whole body doses decreased with increased source terms. The iodine doses tracked properly. Mr. Arnold tried to explain the effect.

Mr. Ross explained the criteria for bypassing the high pressure injection signal and throttling the high pressure injection pumps. The two ways to defeat HPI are to place the pump's control switch in "pull-to-lock" and pressing the bypass switch with the bypass permit light on. Mr. Ross assured us the operators at TMI know the criteria for bypassing the HPI system.

Commissioner Gilinsky asked whether the GPU officials had seen the recent EG&G report on primary feed-and-bleed cooling. Mr. Wallace responded that the report was not relevant to TMI-1 because that plant has high pressure pumps. Mr. Pollard commented that the first EG&G report was not relevant to TMI-1 but that the second report was relevant. Mr. Wallace said that he had not seen the second report.

Commissioner Gilinsky asked what percentage of safety-related equipment had been fully environmentally qualified. Mr. Wallace said that 85 percent of that equipment had been qualified. Commissioner Gilinsky said that he was surprised the figure was that high. Mr. Arnold said that he would look into this question and tell the Commissioner whether this figure was correct. Finally, Commissioner Gilinsky asked about fire protection. He was told that the plant was substantially in compliance with NRC's requirements but that the company did not know precisely when it would be in full compliance. The NRC

staff has not yet made up its mind on the issue of alternative shutdown capability and on the question of whether 1 or 3 hour fire barriers should be required.

UNIT 2 TOUR

After lunch we drove around the Unit 2 site and observed the loading of an EPICOR II liner. Mr. Barrett pointed out the low level waste storage area and the storage tanks for the processed water from the TMI-2 containment.

We entered Unit 2 and went to the Reactor Building Entry Command Center. A member of the Command Center's team panned several TV cameras to show us the work going on with the crane and the condition of the containment.

We toured the control room, the refuel floor, portions of the turbine and auxiliary buildings.

OFFSITE FACILITIES

After the tour of Unit 2, we drove to the observation center and entered the Emergency Off-site Facility. The EOF was fairly well equipped with the proper stations for handling an off-site release. The building, however, lacks a filtered ventilation system, shielding and independent power. Mr. Arnold explained that a new backup center was being planned at Reading.

Our last stop on the tour was the Environmental Assessment Command Center. This facility is located at the Harrisburg Airport. The function of the facility is to monitor the off-site releases, direct the survey teams, and assess the dose rates to the public during an accident. The facility can use several "hard-wired" ion chambers surrounding the plant site to read the dose rates from a release. In addition there are several remote stations with TLD's that can be taken to the Center for reading. The Center also has sampling capability. However, the Center is not protected against a release by shielding or filtered ventilation.