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 U.S. NUCLEAR
 REGULATORY COMMISSION

TMI Program Office
 Attn: Mr. L. H. Barrett, Deputy Program Director
 US Nuclear Regulatory Commission
 c/o Three Mile Island Nuclear Station
 Middletown, PA 17057

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
 Operating License No. DPR-73
 Docket No. 50-320
 Radioactive Water Management Program

This is the periodic report presenting results of the program to detect radioactive water leakage to the groundwater of TMI-2.

Groundwater Monitoring

The following groundwater monitoring data is attached:

1. Precipitation Data (Table 1) for the period from May 15, 1982, to June 14, 1982.
2. Individual computer graphs (Figure 1) of tritium concentrations for each monitoring station and the East Dike Catch Basin (EDCB) up to and including June 8, 1982. NOTES: The graph for OW-9 has been deleted as no samples have been taken from this monitoring station in the past year due to an obstruction being lodged in the monitoring station. The tritium concentrations for MW-2, MW-3, MW-4, OW-10, OW-16, and OW-17, based on TMI-2 Chemistry analysis are included for the period from June 8, 1982, through July 6, 1982.
3. Individual computer graphs (Figure 2) indicating water levels within the monitoring stations up to and including July 6, 1982.
4. Computer Tables (Tables 2 and 3) of gamma scan data up to and including July 20, 1982.
5. A graph (Figure 3) indicating gamma scan data from Monitoring Station MW-2 sample analysis.

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6. A composite drawing showing all monitoring locations with a graph of the tritium concentrations reported in each station.

The June data shows elevated tritium concentrations in samples drawn from the Unit II power block area. Several peak concentrations were reached during the June sampling periods. On June 15, 1982, OW-16 and MW-3 results showed concentrations of 890,000 pCi/ℓ and 58,000 pCi/ℓ, respectively. On June 22, 1982, OW-10 results showed a concentration of 96,000 pCi/ℓ. Tritium concentrations for the remaining wells were all within the range of previous values.

The heavy precipitation experienced during the first two weeks of June (Table 1) may have affected the tritium concentrations in some of the wells. MW-2 in particular shows a downward trend during the June 8, 15, and 22, 1982 sampling dates. Likewise, most of the June 8, 1982, monthly samples are lower in tritium concentrations than the May 4, 1982, samples.

Gamma results for all the wells (except MW-2) during the June period were LLD for the radioisotopes listed. On June 8, 1982, and June 15, 1982, positive Cesium 137 values of 10 pCi/ℓ and 8.1 pCi/ℓ, respectively were reported on MW-2 samples. Both concentrations were very close to LLD levels. The July 12, 1982, and July 20, 1982, results from MW-2 were reported by Unit II Chemistry. The positive Cs-137 value recorded on July 6, 1982, was analyzed by an offsite laboratory. Again, the value was very close to the LLD for Cs-137.

Since the presence of Cs 137 in MW-2 seems to be sporadic, the detection of the isotope is likely a function of the sediment content of the sample. That is, given cesium's affinity for soil particulates and MW-2's fluctuating sediment content due to the sampling method (i.e. bailing of well), the detection of Cs-137 at such low concentrations is expected.

Antimony 125 was detected in an OW-17 sample on June 1, 1982. A recount of the sample confirmed the initial concentration of 11 ± 5.7 pCi/ℓ. This concentration of Sb-125 compared with the measured tritium concentration in OW-17 is consistent with the BWST as the source of groundwater concentration. The offsite laboratory will continue to analyze well samples for Sb-125.

June and July water levels along with precipitation data for June are included in the report.

Cork Seal, Tendon Access Gallery, and Containment Outer Wall Radiation Monitoring

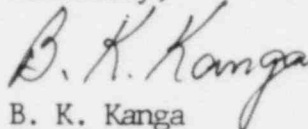
Continued surveillance of these areas has not indicated any water leakage from the Reactor Building.

Additional Activities

A new method of measuring BWST water level indication has been established which uses the plant computer and provides a digital level indication to 0.01 feet.

Based on previous calibration records, the associated level transmitters are accurate to 0.25% which provides the computer with an input accuracy of 1.7 inches of level. This provides a better method for trending the BWST water level than the Control Room panel mounted meters which are only accurate to \pm seven (7) inches of level. Trending data is taken three (3) times per week on both BWST level transmitters. Using this method, a $\frac{1}{2}$ gallon per hour leak rate could be detected with some degree of confidence in one month. Based on the data taken to date, there is no indication of a continuing BWST leak.

Sincerely,



B. K. Kanga
Director, TMI-2

BKK/JJB/jep

Attachments

CC: Dr. B. J. Snyder, Program Director - TMI Program Office

LIST OF ATTACHMENTS

Figures

- Figure 1 Graph of Tritium Concentrations of Monitoring Stations and East Dike Catch Basin Samples versus Time
- Figure 2 Graphs of Water Levels in Monitoring Stations versus Time
- Figure 3 Gamma Scan Results for Monitoring Station MW-2 versus Time

Tables

- Table 1 Precipitation Data May 15, 1982 to June 14, 1982
- Table 2 Cesium 137 Concentrations in Monitoring Stations MW-1 to MW-8
- Table 3 Cesium 134 Concentrations in Monitoring Stations MW-1 to MW-8
- Drawing* Groundwater Tritium Concentrations at Site Liquid Monitoring Stations