

ENCLOSURE 1

GENERAL PUBLIC UTILITIES CORPORATION
THREE MILE ISLAND UNIT I
DOCKET NO. 50-289
SUMMARY OF MEETING - JULY 25, 1972

SUMMARY

At General Public Utilities' (GPU) request, a meeting was held in Bethesda on July 25, 1972, to discuss the LOCA dose of 439 rem for Three Mile Island Unit 1 (TMI-1). We agreed to review joint frequency distributions of wind speed and direction and the applicant's justification for using the "split sigma" approach if the information is received consistent with a planned October ACRS meeting. Conceivably these could provide some relief to the high dose. We stated our position with respect to the B&W sodium thiosulfate chemical spray, namely that there is no further dose reduction credit anticipated for this spray system in the time scale required for TMI-1 licensing. Further, we informed the applicant that if the dose can't be reduced to about 150 rem by other means, we will require that the proposed containment leak rate be reduced from 0.2 to 0.1% per day.

The applicant reiterated his estimated fuel loading date as April 1973.

INTRODUCTION

Using the AEC staff model, we calculate the 0-2 hour thyroid dose at the exclusion boundary to be 439 rem for the LOCA. Previously, we had suggested reducing the containment leak rate as a means of lowering the dose to an acceptable level. The applicant is reluctant to reduce the leak rate. Instead, it was his opinion that he had data to support more favorable meteorology and/or a larger dose reduction factor for the sodium thiosulfate spray system, either of which might reduce the LOCA dose to an acceptable level. This meeting was held to review and discuss this LOCA dose situation.

DISCUSSION

1. Meteorology

The accident meteorology for the TMI site is characterized by an inversion condition with low wind speed. For wind speeds greater

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than 2 meters per second, there are much test data and corresponding model correlations. However, for low wind speeds there is a lack of such material. Because of the lack of information, the applicant has conducted a series of onsite measurements under inversion conditions. Fourteen separate tests, both with and without wake effects, were conducted over a period of 5 months. Results of these tests and the applicant's evaluation had been submitted previously for our review.

As supported by the recorded data, the tests showed some meander under inversion conditions. This type of behavior is not precedent setting as it had been seen before at NRTS in Idaho and at the Indian Point site. However, the difficulty in applying the test data is correlating actual measurements at fixed reference points with what would actually occur at the points of interest, namely the site boundary. The applicant claims that factoring the test results into a meteorological model provides a dose reduction factor of 1.72 relative to the AEC prescribed model.

W. Gammill stated that, although the applicant's evidence supports the phenomena of meander under inversion conditions, there was insufficient data to properly quantify this effect. It is recognized that the staff meteorological and dose computation models are conservative but this is intended to be so. Further, a single evaluation model provides a standard means of comparing meteorology and dose between different sites.

The applicant asked if there were additional meaningful tests which could be performed to support a change in the site meteorological parameters. Gammill stated that we could not recommend any specific set of tests that would guarantee a basis for revising the meteorology. GPU then expressed the feeling that this type of action would stifle industrial sponsorship of independent research and testing.

After further discussion, we agreed to review the applicant's justification, including appropriate data from other sites, for analyzing the meteorological data using the "split sigma" approach. Additionally, we will review joint frequency distributions of wind speed and wind direction by ΔT stability class. This information had not been presented previously for review. Conceivably this new information could provide some relief for the LOCA dose. The applicant agreed

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to supply his input within 2 weeks and we committed to complete our evaluation within another 3 weeks, about August 25.

2. Sodium Thiosulfate Spray

For the applicant, D. Montgomery of B&W inquired as to the value of the dose reduction factor which the staff would give credit for sodium thiosulfate spray. B. Grimes stated that the most significant difference between the B&W and AEC chemical spray evaluation models is the assumed amount of non-removable iodine (methyl iodide). We assume a value of 10%, whereas B&W assumes 2%. Grimes further stated that studies are either underway or proposed which could affect the credit of chemical sprays. The first study by Battelle Northwest is to evaluate measurements of non-removable iodine of past experiments with regard to applicability to water reactor accident conditions. A second study by Battelle Columbus will be conducted to address the formation and suppression mechanisms for hypoiodous acid (HOI). And finally, complete review of the staff spray evaluation model is being considered. Grimes summarized by saying that, although these studies could lead to an increase in dose reduction factor for the sodium thiosulfate spray, there is no change in the present dose reduction factor of 5.6 anticipated in the licensing time scale for TMI-1.

Montgomery asked that a formal letter be transmitted to B&W which explicitly states the AEC position on the sodium thiosulfate spray. If this is not forthcoming, it will be formally requested by B&W.

3. Containment Leak Rate

We again advised the applicant that he could significantly reduce his LOCA dose by reducing the containment leak rate from 0.2 to 0.1% per day. Furthermore, actual leak rate test results from Point Beach Units 1 and 2, Turkey Point Unit 3, Palisades, and Oconee 1 support the fact that this is a practical and measurable containment leak rate. The applicant expressed his concerns about maintaining such a leak rate over the forty-year lifetime of the containment building.

K. Kniel informed the applicant that if the dose can't be reduced to about 150 rem by other means, we will require the proposed containment leak rate be reduced.

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4. Fuel Loading Estimate

Prior to the meeting, we had asked the applicant to reassess his fuel loading data in light of the recent flood and delays in ring girder repairs. GPU stated that they had reviewed their schedule and although there is uncertainty about completion of the ring girder repairs, they reiterate their estimated fuel loading date as April 1973, as previously stated in their letter. This date compares with a reported date of June 1973 by Reactor Operations.

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ATTENDANCE LIST

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