UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
METROPOLITAN EDISON COMPANY, ET AL.	)	Docket No. 50-289
	)	
(Three Mile Island Nuclear Station, Unit No. 1)	)	

NRC STAFF REPLY TO AAMODT MOTION FOR RECONSIDERATION OF COMMISSION ORDER CLI-84-22 AND OPENING OF A HEARING

Mary E. Wagner
Counsel for NRC Staff

February 4, 1985

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I. INTRODUCTION

On January 15, 1985 intervenors Norman and Marjorie Aamodt filed a pleading [1/] seeking (1) reconsideration of Commission Order CLI-84-22, which denied a June 21, 1984 Motion by the Aamodts, [2/] and (2) reopening of the hearing in this proceeding.

The Aamodts' June 21 Motion had alleged that releases of airborne radioactive materials from the accident at TMI-2 were substantially greater than have been acknowledged by the Licensee, the NRC Staff or the Commonwealth of Pennsylvania and that such releases led to health effects

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1/ Aamodt Motion For Reconsideration of Commission Order CLI-84-22 and Opening of a Hearing, January 15, 1985 (Motion).

2/ Aamodt Motions For Investigation of Licensee's Reports of Radioactive Releases During the Initial Days of the TMI-2 Accident and Postponement of Restart Decision Pending Resolution of This Investigation, June 21, 1984 (June 21 Motion).

in the local population. This claim was based upon an informal series of interviews, conducted by Mrs. Aamodt and others, of residents of areas near TMI-2. The Aamodts also claimed that Licensee likely intentionally destroyed radiation release records to prevent the disclosure of the health hazard the accident posed to local residents. The Aamodts requested the Commission to investigate their allegations and defer a decision on Unit 1 restart until the issues they raised had been fully resolved.

In denying the June 21 Motion, the Commission agreed with the Staff and Licensee that the Aamodts had not presented sufficient reliable information to show that previous, more comprehensive and scientific studies of the TMI-2 accident radiation releases are erroneous and that further investigation by the NRC into the matter was not warranted at that time.

For the reasons set forth below, the Aamodts' current Motion is without merit and should be denied.

II. DISCUSSION

A. Motion for Reconsideration

The Aamodts argue that their Motion is one for "reconsideration" of CLI-84-22, and not an amendment to their June 21 Motion, or a new motion for an investigation. Motion at 1-3. Regardless of how the Motion is characterized, however, the information presented does not warrant further investigation by the NRC into the health effects of the TMI-2 accident.

The Aamodts cite "significant new information" as a basis for reconsidering CLI-84-22. In particular, they state that they now have obtained death certificates which confirm their earlier assertion of an increased cancer mortality rate. They also claim that Licensee personnel "lied" to the Commonwealth of Pennsylvania personnel at the Bureau of Radiation Protection on the morning of March 28, 1979, after a projected release of 10 R/hr over Goldsboro, by "claiming, contrary to the fact, that surveillance teams had been dispatched and had verified that a significant release had not occurred." Id. at 4.

Neither claim justifies reconsideration of the Commission's decision in CLI-84-22. The Commission concluded in CLI-84-22 that the Aamodts had not presented sufficient reliable information to show that previous, more comprehensive and scientific surveys of TMI-2 accident radiation releases are erroneous. It also noted that the Center for Disease Control (CDC) reviewed the Aamodt allegations and found that the Aamodts had not presented convincing evidence of increased cancer incidence, cancer mortality, or adverse pregnancy outcome as a result of the accident. Death certificates substantiating that the cause of the deaths noted in the Aamodts' survey are listed as cancer do nothing to transform the Aamodts' interviews into a reliable survey nor do they demonstrate error in the vast array of prior scientific studies which concluded that allegations of adverse health effects resulting from the accident are without merit.

As for the alleged "lie" by Licensee, the allegation is unfounded. As support for their claim, the Aamodts rely on a working draft which was prepared in the course of an investigation conducted in 1980 which

resulted in NUREG-0760. Motion at 2-5; Attachment 4 to Motion. [3/] In a portion of an interview of Mr. Thomas Gerusky, Director of the Pennsylvania Bureau of Radiation Protection (BRP), quoted in Attachment 4 (at pp. 14-15), Mr. Gerusky stated that on the day of the accident Licensee personnel had told him, before 8:00 a.m., that offsite measurements had been taken at Goldsboro which confirmed that there was no radiation leak. Since in fact no measurements had been taken at Goldsboro by 8:00 a.m., [4/] Mr. Gerusky's recollection of the timing led to the draft conclusion in Attachment 4 that Licensee "countered the report to BRP with nonexistent Goldsboro survey results." Id. at 14. However, Mr. Gerusky has acknowledged that his statement, quoted in Attachment 4 to the Aamodt Motion, reflects an error in his recollection, and this error was corrected by Mr. Gerusky in an October 1, 1980 interview by the NRC Staff, where Mr. Gerusky indicated that it was about 9:00 a.m. when the Goldsboro measurement was reported to the Commonwealth. See October 1, 1980 transcript of NRC Staff Interview of Thomas Gerusky, exerpts of which are attached to Licensee's Response to Aamodt Motion dated January 25, 1985. The timing of Licensee's report is evidenced by the Pennsylvania Emergency Management Agency log. Id. Thus, Licensee

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3/ The copy of Attachment 4 which was served on the Staff with the Aamodts' Motion was not a complete copy of Exhibit 7 to the Gamble testimony. Pages 4, 10, 11, 14 and 16 were omitted. For the sake of completeness, the Staff is attaching to this response a copy of the complete document.

4/ For a chronology of the dose rate projections, see NUREG-0600, Investigation Into the March 28, 1979 Three Mile Island Accident by Office of Inspection and Enforcement, August 1979, beginning at page II-A-1, particularly items # 63, 70, 77, 90, 91, 94, 98, 100, 102, 104, 107, 110, 112 (first report of offsite reading) and 136.

did not deceive the Pennsylvania BRP concerning radiation measurements at Goldsboro and the Aamodts' claims in this regard provide no basis for reconsideration. 5/

In short, the Aamodts' accusation that "lying" took place is unsupported speculation; moreover, it is speculation which was directly refuted by Mr. Gerusky some four years ago and by the log of the Pennsylvania Emergency Management Agency.

The several alleged "gross errors" by the Commission in CLI-84-22 likewise do not provide a basis for reconsideration. First, the Aamodts claim the Commission should not have relied on the NRC Staff to provide a report on the status of studies of radiological impacts of the TMI-2 accident, because views which differed from the position that doses to the public were negligible "were not presented." Motion at 5. As support for this assertion, the Aamodts cite certain studies which assertedly present differing views. Id. These studies were included in the Staff's bibliography. See Attachment 5 to the Aamodts' Motion. Thus, the studies cited by the Aamodts were identified to the Commission by the Staff. The "Status of Radiological Impact Studies from the Accident at Three Mile Island", which accompanied the chronology when it

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5/ As for the testimony by Messrs. Miller and Dubiel, also cited by the Aamodts in Attachment 4 as evidence of Licensee deception on radiation monitoring in Goldsboro, an equally logical conclusion to be drawn from their confusion over the timing of when a surveillance team was dispatched to or arrived at Goldsboro is that attempts to reconstruct the chronology of events on March 28, in the months following the accident, not surprisingly reflected some natural inability to reconstruct the precise series of events based solely on the recollection of individuals. The chronology which accompanied NUREG-0600 (see pp. II-A-1 et seq.) was based on logs, recordings, printers and other written documentation, in addition to interviews.

was sent to the Commission, is a six-page summary which did not attempt to address each and every report but to present conclusions based on the credible studies of releases.

Second, the Aamodts claim that the Commission should not have relied on the conclusions by Dr. Glyn Caldwell of the Centers for Disease Control to the effect that the Aamodt study did not present convincing evidence, because the conclusions can be "presumed" to have been influenced by the Staff. Motion at 6. The Staff's intent to influence, according to the Aamodts, is shown by the fact that virtually every other page of the Aamodt June 21, 1984 Motion was not copied and sent to Dr. Caldwell. This assertion of deception is simply incredible. No rational observer could seriously come to the conclusion (1) that the NRC Staff would intentionally ask for comments on certain selected pages of a document which it represented to be complete (and which, because of the omitted pages, often contained partial sentences at the top or bottom of the pages provided), or (2) that the Staff thought the CDC, reading the partial document would believe the document to be complete. In any event, Dr. Caldwell should not be "presumed" to have been hampered in his analysis of the Aamodt study by the Staff's unfortunate provision of an incomplete copy of the study because, in fact, Dr. Caldwell obtained a complete copy of the study from another source, and he based his comments on the complete copy. See letter from Glyn G. Caldwell to William A. Mills, September 7, 1984, at 1.

Finally, the Aamodts argue once again that the conclusion that there was a negligible dose to the public is erroneous, this time citing to a critique by Mr. Aamodt of a publication by the U.S. Department of Health

and Human Services (HHS) on the use of photographic film to estimate doses. Motion, p. 6; see Appendix B to Motion. Even if we were to assume, for sake of argument, that Mr. Aamodt's critique thoroughly discredits the HHS report, that report is but one of a substantial number of reports which lead to the conclusion that the dose to the public from the TMI-2 accident was negligible. Moreover, Mr. Aamodt's critique of the HHS study in no way refutes the Commission's conclusion that the Aamodt study was unscientific and did not present reliable information.

Since none of the alleged "gross errors" cited by the Aamodts have any merit, and their "significant new" information is neither new nor significant, their motion for reconsideration should be denied.

B. Motion to Reopen

In the same pleading, the Aamodts also requested that the Commission "open a hearing to consider the impact of the significant new verified information concerning a cancer mortality rate 7 times that expected . . . and the indisputable evidence of GPU's deliberate deception concerning radiation surviellance (sic)." Motion at 15. This "new" information, which also forms the basis of the motion for reconsideration, falls far short of the required showing for reopening a record in a Commission proceeding, and the motion to reopen should be denied.

1. Standards for Motions to Reopen

The Aamodts' motion to reopen may not be granted unless it meets the standards for reopening a record set forth in Kansas Gas and Electric Co. (Wolf Creek Generating Station, Unit No. 1), ALAB-462, 7 NRC 320, 339 (1978). Specifically, the motion:

> (1) must be timely; (2) must raise significant safety (or environmental) issues; and (3) must show that a different result might have been reached had the newly proffered material been considered initially.

Wolfe Creek, supra; Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit No. 1), ALAB-738, 9 NRC 1350, 1355 (1984), citing, Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-598, 11 NRC 876, 879 (1980).

A motion to reopen is timely presented when the movant shows that the issue sought to be raised could not have been raised earlier. Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-138, 6 AEC 520, 523 (1973). Irrespective of the timeliness of a motion, a record need not be reopened when the issues sought to be presented are not of "major significance" and absent a showing that the "outcome of the proceeding might be affected." Public Service Co. of Oklahoma (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 804 (1979). 6/ A proponent of the motion must present "'significant new evidence . . . that materially affects the decision.'" Diablo Canyon, CLI-81-5, 13 NRC 361, 362-63 (1981). In other words, the proponent must establish the existence of newly discovered evidence having a material bearing on the proper result in the case. Duke Power Co. (McGuire Nuclear Station, Units 1 and 2), ALAB-699, 15 NRC 453, 465 (1982).

6/ See also Pacific Gas and Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-598, 11 NRC 876, 887 (1980); Georgia Power Co. (Alvin W. Vogtle Nuclear Power Plant, Units 1 and 2), ALAB-291, 2 NRC 404, 409 (1975); Vermont Yankee, ALAB-138, 6 AEC 520, 523 (1973).

In addition, the new material in support of a motion to reopen (1) "[a]t minimum, . . . must be set forth with a degree of particularity in excess of the basis and specificity requirements contained in 10 C.F.R. 2.714(b) for admissible contentions" and (2) if the evidence is to materially affect the previous decision, "it must possess the attributes set forth in 10 C.F.R. 2.743(c) defining admissible evidence," that is, it must be "'relevant, material and reliable.'" Diablo Canyon, ALAB-775, 19 NRC 1361, 1366-67 (1984) (footnote omitted). Accordingly, the proponent of a motion bears a "heavy burden." Wolf Creek, supra at 338. In addition, the moving papers concerning a motion to reopen must be strong enough, in light of opposing filings, to avoid summary disposition. Vermont Yankee, supra, 6 AEC at 523. If the undisputed facts establish that an allegedly significant safety issue does not exist, has been resolved, or, for some other reason, will have no effect on the outcome of the licensing proceeding, the motion to reopen should not be granted. Id.

2. The Aamodts' Motion

a. Timeliness

With respect to the timeliness of the request, the Aamodts do not explain either (1) why the information forming the basis for the alleged deception by Licensee is "new"; or (2) why the Aamodts waited from June 1984 (the time their study of health effects was complete) until January 1985 to move for reopening. As for the alleged "deception", the testimony of Mr. Gerusky and others, which form the basis for the Aamodt

motion, have been part of the public record for years, [7/] and this basis for reopening should be rejected on timeliness grounds. As for the "verified information concerning a cancer mortality rate 7 times that expected," while there is no explanation as to why the death certificates on which the Aamodts rely were not available until recently (or if, indeed, they were not earlier available), this basis for reopening is not fatally defective on timeliness grounds in view of the fact that the Aamodt study showing the alleged rise in cancer mortalities was not complete until several months ago.

b. Significance of the New Information

The Aamodts have not established the safety significance of the new information. Indeed, as Licensee's Response makes clear, the information reflected in Attachment 4, as to when Licensee told Pennsylvania of offsite readings, is of no significance whatsoever. It was in error, and the record was clarified some four years ago by Mr. Gerusky, Director of the Pennsylvania Bureau of Radiation Protection.

As for the allegedly "verified" increased cancer mortality rate, the Aamodts have not shown any nexus between their allegation and the TMI-1 restart proceedings. While a verified seven-fold increase in cancer mortality may be significant information per se, it does not address any issue bearing on a TMI-1 restart decision. As Dr. Caldwell's September 7,

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7/ Page 16 of Attachment 4, which page was not included in the copy of the Aamodts' Motion which was served upon the Staff, lists the references used in preparing this draft section of NUREG-0760. The documents referenced have, to the best of Staff's knowledge, been available in the NRC's Public Document Room for a number of years.

1984 letter properly points out, the Aamodts' study does not take into account the fact that cancer occurs after a long latent period, and date of diagnosis is more important than date of death. The Aamodts have not established the time of diagnosis of the alleged cancers. They have not demonstrated a relationship between the alleged increased cancer mortalities and the accident at TMI-2, licensee competence and integrity or any other issue in this proceeding. Accordingly, the Aamodts have not demonstrated that the alleged new information has any significance for the TMI-1 restart proceeding.

c. Likelihood of a Different Result

Since the alleged deception by Licensee is without foundation, the results of these proceedings clearly would not be affected in any way. As for the alleged cancer mortality increase, health effects of the TMI-2 accident were not an issue in the TMI-1 restart proceeding. No nexus has been established between the alleged increase in cancer mortalities and any issue in the restart proceeding. Therefore, the Aamodts' "new information" on cancer mortality rates would not affect the outcome of the restart proceeding.

In sum, the alleged deception by Licensee is objectionable on timeliness grounds, represents an error in recollection of timing and as such is of no significance whatsoever, and accordingly there is no likelihood of a different result being reached in the TMI-1 restart proceeding had the allegations of deception been presented to the Licensing Board initially. While the alleged increase in cancer mortality rates may not be objectionable on timeliness grounds, no nexus has been established

between that allegation and any issue in the restart proceeding, so that in terms of reopening the record it is neither a significant issue nor could it affect the outcome of any issue in that proceeding. Accordingly, the Aamodts' motion to reopen the hearing should be denied.

III. CONCLUSION

For the reasons stated above, the Aamodts' Motion warrants neither reconsideration of CLI-84-22 nor reopening the record in this proceeding, and should be denied in all respects.

Respectfully submitted,

Mary E. Wagner
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 4th day of February, 1985

Attachment 7

Exhibit 7 to Gamble Testimony

Exhibit 7

Correction/Rewrite Copy

REPORTABILITY OF A PREDICTED

OFFSITE EXPOSURE RATE

At about 0740 on March 28, 1979, the licensee attempted to report to NRC Region I the General Emergency involving known major fuel damage. 1/ During telephone contacts with Region I personnel, which began at about 0750, the licensee did not notify Region I of an offsite release calculation which predicted significant exposure rates downwind toward Goldsboro.2/ The reportability of that prediction is the object of this investigation.

Except for minor time variances, matters bearing on the reportability of the offsite exposure rate prediction have been described rather consistently by TMI-2 accident participants and investigators.

Prediction -10(40?) R/hr in Goldsboro

Upon arriving at the plant in time to hear a Site Emergency announced at 0655, Howard Crawford, a nuclear engineer, proceeded to the Unit 2 control room, ~~Upon arrival~~, where he gathered materials ~~to be used in~~ for predicting offsite exposure rates on the basis of the reading on the Containment Building dome monitor, a task he had performed during drills for two years. 3/ Crawford recalls that his first calculation, completed soon after 0700, ~~showed~~ a prediction of an exposure rate of ~~40~~ R/hr in Goldsboro. Neither the time of day nor the result of this calculation has been substantiated by records or by the recollection of others.4/ ~~However, the early prediction, if it occurred, is not pertinent to this investigation~~, since a similar, documented

However, it is not material to this investigation to know whether the 40 R/hr prediction occurred.

prediction (10 R/hr at the Low Population Zone boundary) was performed before the licensee reached NRC Region I by telephone at about 0750. The question, is whether this 10R/hr prediction was properly documented

This prediction (10R/hr at the LPZ) appears to have been performed by Crawford after 0713, the beginning of during or after the massive release of radioactivity, a material to the reactor building atmosphere.[5] ~~which began at 0713.~~[5] Both the time and magnitude of Crawford's dome monitor (HP-R-214) reading (300 R/hr), on which the 10R/hr prediction was based, are uncertain. ~~Accurate or not, the 300 R/hr reading formed the basis for the 10 R calculation.~~ The time shown on the calculation sheet, 0744, probably indicates either ~~could be made~~ when HP-R-214 was read or when the calculation was performed. Thus, ~~Therefore,~~ Mr. Crawford's prediction of 10 R/hr at the LPZ seems to have occurred between 0713 and 0744.

Crawford recalls discussing a 40 R/hr prediction with Richard Dubiel, Supervisor of Radiation Protection and Chemistry, and with James Seelinger, Unit 1 Superintendent.[6][7] Dubiel and Seelinger recall ~~such~~ discussions only concerning the 10R/hr prediction.[8][9][10][11] As stated previously, ~~Again,~~ this distinction between 40R/hr and 10R/hr is unimportant ~~to this analysis~~ investigation.

During a ~~the~~ 6/6/79 interview,[7] Crawford stated:

> They both thought it appeared too high and they immediately talked, you know, possible steam damage to the dome monitor...they wanted to get a very good feel to see if they wanted to believe that number....

On 5/22/79, Dubiel Rad stated:[9]

...I don't think we ever had projections that were meaningful and I don't believe at that time we had any projections that indicated anything of a serious nature, even based on the procedures.

This statement appears to have been based on two factors - disbelief of the dome monitor reading and knowledge of low pressure in the reactor building - as indicated in the following exchange on 9/21/79.[10]

Q Do you recall doing an off-site dose calculation at approximately 7:10 on the morning of March 28th?

Dubiel I did not do any off-site dose calculations.

Q Do you recall verifying one?

Dubiel I recall verifying one. I recall looking at several during the morning.

Q And specifically, do you recall one that was made by Mr. Crawford based on a reading of the dome monitor?

Dubiel Yes, sir, I do.

Q Do you remember verifying that one?

Dubiel Yes, I do.

Q Am I correct that Mr. Crawford's calculation was incorrect?

Dubiel No, I think Mr. Crawford's calculation was correct.

Q Was it based on an incorrect reading of the monitor?

Dubiel No, I don't believe so.

Q What was the calculation of the off-site dose he came up with?

Dubiel Approximately 10 R per hour gamma at a location which was the center of the town of Goldsboro, which is on the west shore of the Susquehanna.

Q And your understanding is that, based upon the information that he had, he correctly calculated a projected dose of 10 R per hour?

Dubiel Yes.

Q Can you explain how Mr. Crawford could have made an accurate calculation of 10 R per hour as the expected level in Goldsboro when in fact there were no detectable levels?

Dubiel I think that the single biggest factor in that particular

item is that the dome monitor did not respond accurately. The projected levels are based on the dome monitor readings, plus some very conservative assumptions. Since we are trying to do, in defining the procedure for dose projections, there are a lot of parameters which cannot be determined, so that conservative assumptions are made. And, I feel, first of all, that the dome monitor over-responded significantly.

I feel, secondly, that the building pressure of one or two pounds versus the conservative assumption of 55 pounds would add to it.

Earlier, on 5/11/79, Gary Miller, TMI Station Manager, had testified before the U. S. House of Representatives, Committee on Interior and Insular Affairs:[12/]

Weaver: What did you think of that? The high reading on that dome monitor?

Miller: I just did not think about it in terms of fuel damage. I knew that it meant there was a potential to release things offsite. My only concern was to get readings.

Cheney: Did you have any question about the values of those readings?

Miller: I thought it was too high, but I did not need to be convinced that it was high enough to be concerned. It was ~~reading~~ reading 40,000 or 50,000. I mean that was beyond what I had ever envisioned ever seeing on the dome monitor, so you can discuss whether there was shielding and moisture and whether it was beta radiation, and all that sort of thing.

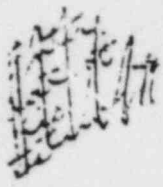
But I did not need to be convinced. What I really wanted was somebody out there with a meter and an iodine kit sampling, and the wind direction. That is real numbers. That is really what someone is going to get out there. So that was our concern.

Onsite and Offsite Monitoring

Mr. Miller's statement reflects a common concern for getting radiation measurements onsite and offsite to supplement the Crawford prediction(a). Upon declaration of a Site Emergency at 0655, efforts to organize and dispatch onsite and offsite monitoring teams began. 8/13/ This seems to have occurred rather clumsily; nevertheless, an onsite team (Alpha) was instructed at about 0730 to measure the radiation level west of the Unit 2 reactor building. 14/15/ During that survey, the wind was westward and very light with minute-to-minute variations of about 10 to 30 degrees. This survey was appropriate, but tardy. At 0746, Alpha Team reported less than 1 mR/hr at Station GE-8 west of the Unit 2 reactor building. As discussed later, this measurement became the basis for discounting a Crawford's prediction(s) of high exposure rates offsite.

At about 0800 and 0830, respectively, Charlie and Bravo Teams were dispatched by vehicle to Goldsboro. At about 0830, Charlie Team reported less than 1 mR/hr in Goldsboro. Bravo Team reported similarly at about 0940. Given that there had been no significant release from the reactor building, these surveys seem adequate from the exposure rate measurement standpoint. However, had a major release occurred, these surveys would have been too little, too late.

TMI management appears to have realized the need for a quick measurement in Goldsboro to confirm or deny Crawford's predictions(s). In statements following the accident, Miller and Dubiel maintained that a State Police helicopter had flown a survey team to Goldsboro soon after the General Emergency was declared.



To the U. S. House of Representatives, Committee on Interior and Insular Affairs, on May 24, 1979, Miller stated:17/

> At approximately 0730 or a little before, I had received predictions of an offsite dose of 10 R at Goldsboro. This was based on the Reactor Building dome monitor, which was still increasing and from our past experience with this source calculation, we did feel these were really this high, but as a precaution, I dispatched a State Police helicopter with an offsite team along with an offsite team in a car and separately, to the West Shore (Goldsboro).

0740 (approx.) - York Haven radiation monitor reading (0) - helicopter at TMI - dispatched offsite teams in helicopter and one

separately in car to West Shore (from G. P. Miller and R. W. Dubiel recall of the incident).

0800 (approx.) - Offsite team in Helicopter at West Shore (Goldsboro) '0' reading - we actually were ahead of the plume - plus onsite team at our West site boundary-'0' reading.

Later, on 9/20/79, the NRC Special Inquiry Group, Miller stated:[18/]

Q In fact, you or someone called the State Police that morning for a helicopter and you got one very fast, didn't you?

Miller There may be---subsequently I know there's some disparities in my time versus the time the thing landed here or the time it's documented. I remember as soon as I had the projection, which was high, for Goldsboro and knowing the west---knowing the wind was blowing to the west and knowing that it was seven or eight in the morning, that I know that I asked for a helicopter before seven thirty.

I knew that that was in my mind and knew that I had the York Haven monitor out over there and I knew I had a guy on the West Shore. That's something that I had practiced and thought about it. Even in the Unit 2 hearings when we discussed the wind blowing west, slow as it was.

Q Do you know whether the helicopter actually came on the site and picked up somebody to go over the river?

Miller To my knowledge it was verified to me that they picked up one or two of our people and they were flown over there. And readings were back, and as I remember the readings were back before Dubiel had thought the plume had gotten there. In other words, we had gotten over there faster than the radiation would have at the wind speed, which was very slow.

On 4/24/79, Dubiel has stated:[8]

At some point around 7:30, Gary Miller asked me for the status of the offsite teams, and I gave him the information that we had two teams ready to go offsite both available for transportation over to the West Shore. Gary directed me to make contact with the State Police and get a State Police helicopter to get one crew over there in a more timely fashion. He was concerned about the traffic--the early morning rush hour traffic trying to go up over the bridge in Harrisburg and then back down and that it might take an hour or more to get over there. He requested that we send one team in a helicopter and a second team in a car of driving over at a normal pace to back them up. I do not recall exactly who told me that they would get the State Police helicopter. I believe it was George Kunder, I do not remember exactly, but within minutes I had it confirmed to

me that the State Police had been notified, and a helicopter would be on its way since they are stationed up at Harrisburg, Harrisburg International Airport. It would be here in a matter of minutes, and that security was notified that this helicopter was coming and would be landing somewhere in the vicinity of the north parking lot, and that they were to allow it to land and make preparations to support its landing in getting our technician on board.

...the timing may be poor but I am estimating 7:40 we had a man in the helicopter and sometime by two to three maybe five minutes later the man was in Goldsboro.

By 9/21/79, Dubiel's position regarding the helicopter survey had changed.[10]

Q Did you have any role in ordering a Pennsylvania State -- or requesting a Pennsylvania State Police helicopter to come to TMI and take a team to Goldsboro to verify what you thought and hoped was the fact, which is that it did not have a 10 R per hour reading there?

Dubiel Yes, I was involved in the determination for the need of a helicopter. I did not make the specific request.

Q Do you know who did?

Dubiel George Kunder made the request via the site protection officer. It might have been a sergeant, someone in the security force.

Q Did the helicopter arrive?

Dubiel The helicopter came in. I don't recall a time. I believe it was an hour later.

Q To your knowledge, did a team go in the helicopter to Goldsboro and take a measurement?

Dubiel I thought one did. I have been led to believe -- when we determined the need for the helicopter, we simultaneously sent a team in a car to drive around. But recognizing the time it takes to get there, we requested a helicopter. Which team got there first I don't know. I know the helicopter was available, because I subsequently used it for other things.

The fact seems to be that TMI management, being concerned about potential exposure rates in Goldsboro, did order a helicopter after declaring a General Emergency at 0724.[19] However, the helicopter did not arrive until 0835, by which time Charlie Team had reported in from Goldsboro and Bravo Team had left by truck for Goldsboro. The helicopter was not used to transport a survey team to Goldsboro.

By 0830, when Charlie Team reported less than 1 mR/hr from Goldsboro, it was clear that a major offsite release from the reactor building had not occurred. But little comfort should have been derived from that knowledge while the reactor building contained an inventory of perhaps 300 million curies of noble gases and other radionuclides.[20]

Reportability and Reporting

The situation was intuitively reportable to NRC under 10 CFR 20.403, which requires immediate notification "...of any incident involving byproduct... material...which may have caused or threatens to cause... release of radioactive material in concentrations which, if averaged over a period of 24 hours, would exceed 5,000 times the limits specified for such materials in Appendix B, Table II...." For Xe-133 the Appendix Table II limit is 3 E-7 μCi/ml.

~~Since~~ There was no reason to believe that the dome monitor (HP-R-214) increase was transient. The "immediately reportable" concentration of Xe-133 ~~would have been~~ was therefore 1.5E-3 μCi/ml (i.e., 5000 x 3E-7 μCi/ml). ~~Using a source term of 1325 Ci/sec and a X/Q of 2.5E-4 seconds per cubic meter,~~ ~~at about~~ not By 0744, Crawford ~~used Radiation Emergency Procedure 1670.4, Rev. 3, dated 2/15/78 to~~ had calculated a concentration of 0.33 μCi/ml at the LPZ, 220 times ~~this~~ the "immediately reportable" concentration! (This concentration was determined as an intermediate step in using Radiation Emergency Procedure 1670.4, Rev. 3, dated 2/15/78 to predict ~~the~~ 10 R/hr at the LPZ!) ~~Using the same procedure, the minimum concentration immediately reportable under 10 CFR 20.403 (1.5E-3 μCi/ml) can be found to correspond to an HP-R-214 reading of only 1.4 R/hr.~~

Early in the accident, the licensee logically could have challenged the Procedure 1670.4 calculation on the basis of low reactor building pressure. But as the reactor building radioactivity inventory increased, as measured by HP-R-214, the licensee should have become ~~progressively~~ less concerned about the conservatism of the calculation and more concerned about the magnitude of the potential hazard.

Telephone contact between the Unit 2 control room and NRC Region I was established, after appropriate efforts by the licensee, at about 0750.[4/] Although earlier contacts had been made with the Region I answering service, this was the licensee's first good opportunity to report the accident in accordance with 10 CFR 20.403.

However, the 0744 prediction of 10 R/hr (0.33 μCi/ml at the LPZ) was not reported, apparently because the first onsite measurement at point GE-8 west of Unit 2 (1 mR/hr at 0746) had been used to calculate a new source term at 0750. Although this one onsite measurement did not prove that the release was insignificant, the licensee could have concluded justifiably that the Crawford ~~[illegible]~~ had ~~[illegible]~~ calculated. release was not as bad as ~~calculated. The reportability of~~ the situation remained, however, in that: (1) the incident still threatened to cause a major release and (2) offsite field measurements had not been completed.

The licensee apparently reported Crawford's 10 R/hr prediction to the Bureau of Radiation Protection but not to NRC. The only identified NRC reference to a high radiation level outside the plant was the following telephone conversation recorded after 10:00 a.m. on 3/28/79 in the NRC Operations Center:

VOICE: The indications are that low levels are being released, we will find out.

VOICE: What is your MDC?

VOICE: There is no question that there was -

VOICE: There was?

VOICE: --released when the incident first occurred.

VOICE: Yeah, I heard somebody, I guess on the radio, I think it was from the Bureau, saying that there were 10 R per hour out the cooling tower.

VOICE: No.

VOICE: Was that emergency services?

VOICE: I don't know who said that.

VOICE: It was somebody from the State of Pennsylvania being interviewed, that's what.

It is unlikely that the licensee inadvertently omitted the 10 R/hr prediction when describing the accident to Region I after 0750. Clearly, from the Crawford and Dubiel statements, the licensee wanted not to believe the dome monitor and Crawford's calculation.

The licensee not only failed to report the 10 R/hr prediction to Region I, but also, according to the following statement of Thomas Gerusky, Director of the Bureau of Radiation Protection, countered the report to BRP with nonexistent Goldsboro survey results. 27/

In the meantime, I requested them to try to get their teams somehow to Goldsboro, and they said that the State Police helicopter was there and that they would get one of their teams up in the air and over Goldsboro. We stayed on the phone with them. They found no radiation levels onsite or in Goldsboro that would indicate any kind of a leak. So therefore, we then notified the Civil Defense to hold tight. This was all before 8:00.

The desire to disprove the 10 R/hr prediction, which could have triggered massive evacuations, is understood. Use of the first onsite, downwind measurement to partially achieve such disproof also is understood. But the use of nonexistent offsite survey results to further disprove the prediction is not understood.

Conclusion

Nothing discovered in this investigation relieved the licensee of the requirement to report to NRC all pertinent facts concerning the accident. The 10 R/hr prediction seems not to have been adequately disproved by 0750, when telephone contact was established with Region I. The decision not to report the 10 R/hr prediction was improper. By not reporting to Region I at about 0750 on 3/28/79 that the calculational method described in Radiation Emergency Procedure 1670.4 had predicted a reportable release of radioactive material, the licensee violated the reporting requirement of 10 CFR 20.403(a)(2).

References

1. NUREG 0600
2. Ibid.
3. Crawford Interview IE 48, 5/3/79
4. NRC Special Inquiry Group, Volume II, Part 3
5. Ibid.
6. Crawford Interview IE 48, 5/3/79
7. Crawford Interview IE 174, 6/6/79
8. Dubiel Interview IE 20, 4/24/79
9. Dubiel Interview IE 133, 5/22/79
10. Dubiel Deposition (SIG), 9/21/79
11. Seelinger Interview IE 77, 5/8/79
12. Oversight Hearings, Subcommittee on Energy and the Environment, May 9, 10, 11, and 15. 1979, Serial No. 96-8, Part I
13. Egenrieder Interview IE 82, 5/8/79
14. Ethridge InterviewIE 89, 5/9/79
15. Burkholder Interview IE 99, 5/17/79
16. Leach Interview IE 47, 5/3/79
17. Oversight Hearings, Subcommittee on Energy and the Environment, May 21 and 24, 1979, Serial No. 96-8, Part II
18. Miller Deposition (SIG), 9/20/79
19. Warren Interview IE 70, 5/7/79
20. Report of the President's Commission on the Accident at Three Mile Island, Technical Staff Analysis Report on Alternative Event Sequences, Appendix E, Fission Product Inventory Within the Containment.
21. Gerusky Interview IE 46, 5/3/79

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
METROPOLITAN EDISON COMPANY, ET AL.	)	Docket No. 50-289
	)	
(Three Mile Island Nuclear Station, Unit No. 1)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF REPLY TO AAMODT MOTION FOR RECONSIDERATION OF COMMISSION ORDER CLI-84-22 AND OPENING OF A HEARING" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk, by deposit in the Nuclear Regulatory Commission's internal mail system, this 4th day of February, 1984:

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