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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

DOCKETED

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD '89 OCT 23 P 4:04

In the Matter of	)	
General Public Utilities Nuclear	)	
Corporation, et al	)	Docket # 50-320 OLA
Three Mile Island Nuclear Station,	)	ASLBP No. 87-554-OLA
Unit 2	)	(Accident Generated Water)
	)	October 20, 1989

Joint Intervenors' Response to NRC Staff's Response to Appeal Board Order

On September 11, 1989 the NRC staff published a Federal Register Notice (54 FR.37517-18) entitled, "GPU Nuclear Corporation, Environmental Assessment and Finding of No Significant Impact". One week later, the NRC staff published 54 FR 38469) providing notification that GPUN was granted an amendment to their license to dispose of 2.3 million gallons of radioactive water by evaporation and release of hazardous substances into the air.

On September 13, 1989, the Atomic Safety and Licensing Appeal Board (ASLAB) ordered the NRC staff to explain the September 11 Notice. The NRC staff responded to the ASLAB's order on September 29, 1989. The ASLAB had granted Intervenor's motion to respond to NRC staff's response.

Intervenor hereby submits the response to NRC staff's Response to the Appeal Board's Order. Intervenor will demonstrate that the NRC staff's response is inadequate and that the Environmental Assessment of the changes in GPUN's proposal is inadequate and untimely.

Respectfully Submitted,

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Prior to the Environmental Assessment and the publication in 54 FR 37517-18, September 11, 1989, the NRC had not evaluated the impact which the change in GPUN's proposal would have on the cost benefit analysis of that proposal and the required comparison with the cost benefit analysis of alternatives.

The Environmental Assessment of this change is inadequate. It was undertaken outside of the adjudicatory setting in spite of the public's keen interest and participation in this issue. It was undertaken outside of the adjudicatory setting even though it was relevant to issues admitted by the Board for litigation<sup>1</sup>, and even though the Board had ruled in January 1988 that,

"..we conclude that during the adjudicatory process it must be established on the record before us that the cost benefit analysis for the design system of the proposed evaporator meets the ALARA standard."  
Memorandum and Order (Memorializing Special Prehearing Conference; Rulings on Contentions; Scheduling) at 6

Not only is the Assessment inadequate but in addition, the Staff wrongfully claims that,

"The principal alternative to the Licensee's current proposal would be the Licensee's original proposal..."  
54 FR 37517

There are an additional eight alternatives to the Licensee's proposal which were evaluated within the Environmental Impact Statement, Supplement #2 (EIS #2) and found by the NRC staff to be acceptable alternatives for disposal of the radioactive water.

The change in GPUN's proposal needs to be further evaluated because of its greater potential to harm the public and the workers, and the greater potential risk in transporting the pelletized waste.

1/ Intervenor had submitted the following material issue of fact in support of Contention 3 which was admitted for litigation,

The source terms of the AGW is even more relevant in light of the fact that water going into the evaporator in Batch cycle\* would deviate even more from the conc- listed in Table 2.2, Nureg 0683, ..... All the above demonstrate that the NRC has based dose calculations on inadequate data.

\* batch cycle is the term used for the operation of the system in a closed cycle which would be required if the radioactive water is not pretreated to "base case" levels by Epicor/SDS (discussed on following pages).

The change in GPUN's proposal arises from the use of the evaporator to remove radionuclides and chemicals from the water before its release to the air, instead of using the two systems known as Epicor/SDS to remove the radionuclides and chemicals.

In EIS #2, the NRC assumed that the levels of activity in the water prior to entering the evaporator would be achieved by use of the Epicor/SDS. These systems were approved by the NRC in 1979/1980 as the means to decontaminate the water and make it safe for disposal. In evaluating the cost, and public and worker exposure, the NRC used the operational experience of Epicor/SDS to determine the average concentration of radionuclides and chemicals in the water. The NRC designated this water as "Base Case" level (EIS #2, Table 2.2. On September 11, 1989, the NRC published its evaluation of a proposal to dispose of water which would not contain "base case" levels. The characteristics of that water have never been presented to the public or their officials. If Epicor/SDS are not used to decontaminate the water which comes from the reactor coolant system (approximately 40% of the total inventory of 2.3 million gallons) and water which presently covers the melted fuel in the reactor core, it is obvious that the water going into the evaporator for treatment and ultimate release through the vaporizer has a higher radiological and chemical content than that evaluated within the EIS #2. Hence the data used to calculate worker and public exposure to releases and potential hazards in the EIS #2 is obsolete. The NRC does not discuss this information in the Environmental Assessment and its potential effect on exposure to the workers and the public during operations and possible accidents.

Nowhere in their response to the Board's order does the NRC explain why they waited until after the adjudicatory proceedings to evaluate the change in GPUN's proposal. The NRC staff states that its consideration of the environmental impacts of the proposed modifications in GPUN's proposal "were already in the hearing record" (Response to ASLAB Order at 2). It is significant that the staff did not provide a reference page for such consideration. In truth, the NRC did not objectively evaluate this change and there is no place to which they may refer in the record. In their response to the ASLAB's Order, the NRC staff state that the use of the evaporator to decontaminate the water was first described in the original GPUN of July 31, 1986 and in the Preliminary System Description (PSD) submitted by GPUN in February 1988. (Intervenor is not able to find any such discussion within GPUN's proposal) The discussion in the PSD does not provide any data demonstrating the radioactive content of the water as it enters the evaporator without prior treatment by Epicor/SDS.

The use of pelletization of evaporator bottoms is mentioned in one sentence in the reference given by the NRC staff in their response to the Board(EIS #2,A28). There is no discussion of pelletization of the solids collected from the liquid waste decontaminated by the evaporator alone and not with prior Epicor/SDS treatment. Use of pelletization is considered in PSD(p.12),however, again,there is no reference to the fact that the solids will contain those radionuclides and chemicals previously assumed to be in the liners from Epicor/SDS. Unbelievably,the NRC staff states that the use of the evaporator for pretreatment of the water,

"was extensively explored during discovery"  
(Response at 4)

This so-called "extensive exploration" amounts to one question by a non-technical citizen intervenor to GPUN. The NRC staff remained silent. While the NRC staff alleges that they knew of the matters which involved the change in GPUN's proposal as early as July 1986,they responded to Intervenor's interrogatory,

Provide documentation and water sample analysis to indicate that all the AGW will be processed by Epicor/SDS to provide the results indicated by GPUN listed in Table 2.2,EIS 6/87....

as follows,

The Licensee's July 31,1986 proposal to dispose of AGW indicated that AGW will be processed by Epicor/SDS prior to evaporation.

NRC staff Responses to Interrogatories from SVA/TMIA.2.22.88

While the NRC maintains that they knew all along that the evaporator would pretreat the water,why did they not evaluate this part of the proposal before September 11,1989? The NRC has known that the public was concerned about this aspect of GPUN's proposal. In February 1989,the chairman of the Citizens'Advisory Panel for the Decontamination of Unit 2(a NRC appointed body which holds public meetings on clean-up at Unit 2 and voted against evaporation) asked GPUN if they would use the evaporator to decontaminate the water instead of Epicor/SDS. GPUN had responded that they did not intend to use the evaporator in place of Epicor/SDS. (Transcript of Citizen Advisory meeting held in Harrisburg,February 1989 at 35-36) Indeed,during the adjudicatory hearings Intervenor had asked GPUN about the use of the evaporator in lieu of Epicor/SDS and GPUN witness had responded,

It will be an operational decision after we have received the amendment.  
(Tr.522)

Clearly the public have been excluded from any determination about this changed proposal. GPUN's proposal has been a moving target during these proceedings.

The NRC staff state that no issues were litigated which explicitly challenged the means of pretreatment.<sup>2</sup> Intervenor's attempts to have this issue litigated were thwarted by the staff and GPUN, and no assistance was provided by the Board. As shown on page 2 of this paper, Intervenor had submitted a material issue of fact relevant to this issue before us today and which, as NRC admits, was not litigated. Both the Board and NRC staff chose to ignore this issue even though later, the NRC saw it worthy of an Environmental Assessment and notice of publication in the Federal Register Notice, and even though during the hearings the NRC admitted that it would have been more appropriate to have had a different starting point for the cost benefit analysis of GPUN's proposal as it was now being presented (Tr 787) The NRC never submitted a revised cost/benefit analysis in spite of information raised by Intervenor during cross-examination of GPUN's witness. For example, when Intervenor questioned GPUN about the availability of data which reflected the radiological and chemical content of the water going into the evaporator without prior Epicor/SDS treatment, GPUN's witness responded,

There is no column (of data) I suppose in this table  
(Tr. 489)

Later when Intervenor asked Mr Tarpinian if they allowed time, which would affect the cost of the proposal) for a certain % of the water being decontaminated by the evaporator, GPUN witness responded by saying,

Not specifically, no.  
(Tr 507)

Even towards the end of the hearing when Intervenor attempted to draw the Board's attention to this important issue, the Board ruled that it was only relevant if Intervenor could show that the information she had was in the nature of a surprise. The Board ignored the NRC staff's responsibility in this matter (Tr 1512-1516)

The NRC staff in their response to the Board's Order states that the Board discussed the use of the evaporator to pretreat the water instead of Epicor/SDS in its Final Initial Decision on pages 145-148. However, the Board does not specifically address the important change in GPUN's proposal. Rather the Board discusses releases from the vaporizer after "Base Case" levels are achieved. The Board neither made a comparison of the systems available to pretreat the water, nor did the Board ensure that use of the evaporator to treat the water, instead of use of Epicor/SDS, was ALARA.

2/ NRC Response to ASLAB's Order at 4(Q.3)

It is noteworthy that in evaluating systems to decontaminate the radioactive water at TMI following the accident, the NRC noted,

The evaporation and condensation system was rejected on the grounds of the long lead time (at least 6 months) which would be needed to make it available and the comparative unreliability of such a system being inoperable approximately 30% of the time and the resulting maintenance would increase occupational radiation exposure.

NRC Staff Issues Environmental Assessment of Decontaminating TMI Waste, Mailed August 14, 1979.

In their response to the Board's Order, the NRC staff suggest that the Board and staff concur in their evaluation of risk associated with GPUN's proposal (Response at 6, Q.7). A review of LBP-89-7, 29 NRC at 147, 148 shows that the Board relied on the Licensee's evaluation of risk. The risks evaluated by the Licensee do not pertain to the change in the Licensee's proposal. For example, the accident risk associated with the spill of a 500,000 gallon tank of "Base Case" level water would not be the same as a spill from a tank containing water which had not received prior treatment by Epicor/SDS since that water would contain more radioactivity and chemicals. Furthermore, as indicated above, the workers will be more at risk from an accident during operation and maintenance of the evaporator. Since the pellets formed will contain the radioactivity and chemicals from the water treated by the evaporator the workers will be more at risk from an accident while operating that system and the possibility of higher exposure from dust emanating from the system.

The estimate of risk associated with transportation of the waste is similarly inadequate because the risks evaluated by GPUN, the Board, and subsequently the NRC staff following the hearings do not take into account that the waste formed as a result of using the evaporator instead of Epicor/SDS will have a higher radiological and chemical content. During discovery, Intervenor had asked GPUN

If the evaporator is used instead of the ion exchange state how much waste would be developed for these certain volumes of water, and what would be the radiological and non-radiological content of this waste.

GPUN responded,

....Up to 90% of the waste might be Class B, the second level of waste form classification.

Licensee's Answers to SVA/TMIA's Second Set of Interrogatories to GPU Nuclear. March 30, 1988.

Pelletization of the waste formed by GPUN proposal, while requiring less shipments, imposes a greater radiological risk to the public and the workers during transportation when compared to solidification of the waste prior to transportation, and of course much higher risk if the waste was stored on-site.

#### CONCLUSION

The NRC has avoided explaining why the public was excluded from providing input to their consideration of the changes in GPUN's proposal. The NRC staff has taken upon themselves to evaluate changes in a proposal which was the subject of adjudicatory proceedings and which the Board had very clearly established was to be shown to be ALARA within the adjudicatory setting. The NRC has tried in vain to show that the change in GPUN's proposal was inadequately discussed prior to the granting of the amendment. However, the record shows that the NRC has done everything possible to avoid public consideration of this vital change in disposing of 2.3 million gallons of radioactive water. In essence, when GPUN applied for an amendment to dispose of the water it was assumed that the water contained certain amounts of radionuclides and chemicals. Presently, it is clear that GPUN has not only achieved approval from the NRC to dispose of the water, but in addition, approval to treat the water to make it safe for disposal. Their proposal to use the evaporator is contrary to the NRC's Order that Epicor/SDS would be used to make the water safe for disposal. Use of the evaporator to treat the water by the evaporator makes these systems redundant which is contrary to the Resource Conservation Act.

A table of data portraying the radiological and chemical characteristics of the water going into the evaporator without Epicor/SDS treatment has not been provided during the building of this record. The public is therefore excluded from the decision making process, to which they are guaranteed by law, in determining whether or not GPUN's proposal is the preferred alternative in the disposal of 2.3 million gallons of water.

CERTIFICATE OF SERVICE

This is to certify that copies of SVA/TMLA's Response to NRC's Response to the Appeal Board's Order has been served upon the parties listed below by prepaid first class mail on October 20, 1989.

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