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Document Control (50-440/441)

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LB#1 Rdg.

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TQuay, AEB

JRead, AEB

TCollins, RSB

Docket Nos.: 50-440  
and 50-441

JUL 22 1983

Mr. Murray R. Edelman  
Vice President - Nuclear Group  
The Cleveland Electric Illuminating Company  
P. O. Box 5000  
Cleveland, Ohio 44101

Dear Mr. Edelman:

Subject: Request for Design Information for Protection/Mitigation of  
Steam Erosion Effects Relative to the Perry Nuclear Power Plant  
(Units 1 and 2)

IE Information Notice (IEIN) 82-22 identified piping failures in turbine exhaust lines and IEIN 82-23 identified valve leakages due to steam erosion. The staff has reviewed the potential impact of such failures on the environmental qualification of safety-related equipment in the Perry plant turbine building, and believes that the current qualification program will likely provide sufficient assurance that equipment will function after failure of the turbine exhaust lines. The small amount of safety-related equipment in the Perry turbine building is currently qualified for a main steam line break.

However, from an overall plant design standpoint, it is necessary for the staff to verify that failures of any lines or components which may be subjected to steam erosion do not create conditions not previously analyzed in the FSAR and documented in the Perry SER. Because you identified, in responses to OCRE's Ninth Set Interrogatories, material and piping system design changes in Unit 2 for mitigating steam erosion effects that are presently not reflected in the Perry FSAR, the basis for such changes need to be documented for the staff's review. The basis for steam erosion prevention/mitigation proposed for Unit 1 also needs to be documented for staff review. Therefore, for these reasons, the staff requests that CEI provide the following information:

- (a) CEI's review findings of operating plant experiences regarding steam erosion as it relates to the Perry plant design in determining which piping or component might be degraded or fail due to steam erosion. The bases for excluding steam containing piping from additional review should be provided.
- (b) CEI's assessment of the consequences of such failures on plant safety, particularly for those review areas defined in FSAR Sections 3.6 and 3.11.

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- (c) For the potential impacts on plant safety identified in (a) and (b) above, the basis for implementation of the changes made in piping systems, valve designs, etc. should be provided including the selection of more erosion-resistant alloys; the planned use of augmented ISI to detect significant erosion prior to failure; the use of physical protection in the vicinity of possible breaks and/or qualification of equipment for the harsh environment that may be created by such a break.
- (d) Piping drawings for Units 1 and 2 affected by the design changes planned.

On the basis of the staff's review of operating plant experience to the extent related above, and in view of CEI's responses to OCRE, it would appear that all lines expected to experience steam erosion are located in the turbine building and their failure would have no impact on plant safety. However, the staff needs the information requested above in order to fully document its position on steam erosion effects on the Perry plant design in the SER.

It is requested that the above information be provided no later than August 15, 1983. This deadline was discussed and agreed to by your staff.

Sincerely,

Original Signed By:  
Paul W. O'Connor

B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing

cc: See next page

\*SEE PREVIOUS ORC FOR CONCURRENCES.

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DATE	07/22/83	07/21/83	07/21/83	07/21/83	07/21/83	07/22/83	

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Mr. Murray R. Edelman  
Vice President - Nuclear Group  
The Cleveland Electric Illuminating Company  
P. O. Box 5000  
Cleveland, Ohio 44101

Dear Mr. Edelman:

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JStefano	RBosnak, MEB
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Attorney, OELD	HBranner, MEB
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Subject: Request for Design Information for Protection/Mitigation of  
Steam Erosion Effects Relative to Perry Nuclear Power Plant  
(Units 1 and 2)

IE Information Notice (IEIN) 82-22 identified piping failures in turbine exhaust lines and IEIN 82-23 identified valve leakages due to steam erosion which is a contention issue to be litigated in the Perry Licensing Board hearing. The staff has reviewed the potential impact of such failures on the environmental qualification of safety-related equipment in the Perry plant turbine building, and believes that the current qualification program will likely provide sufficient assurance that equipment will function after failure of the turbine exhaust lines. The small amount of safety-related equipment in the Perry turbine building is currently qualified for a main steam line break.

However, from an overall plant design standpoint, it is necessary for the staff to verify that failures of any lines or components which may be subjected to steam erosion do not create conditions not previously analyzed in the FSAR and documented in the Perry SER. Although IEIN's do not provide a regulatory basis for requesting additional information, the fact that CEI did address IEIN 82-22 and 82-23 in responding to the Ninth Set of Interrogatories from OCRE, in which changes in materials were identified for Unit 2 to prevent or mitigate steam erosion effects, and since the Perry SER pertains to Units 1 and 2, the basis for such changes need to be documented for the staff's review. Therefore, for these reasons, the staff requests that CEI provide the following information:

- (a) CEI's review findings of operating plant experiences regarding steam erosion as it relates to the Perry plant design in determining which piping or component might be degraded or fail due to steam erosion. The bases for excluding steam containing piping from additional review should be provided.
- (b) CEI's assessment of the consequences of such failures on plant safety, particularly for those review areas defined in FSAR Sections 3.6 and 3.11.

Mr. Murray R. Edelman

- 2 -

- (c) For the potential impacts on plant safety identified in (a) and (b) above, the basis for implementation of the changes made in piping systems, valve designs, etc. should be provided including the selection of more erosion-resistant alloys; the planned use of augmented ISI to detect significant erosion prior to failure; the use of physical protection in the vicinity of possible breaks and/or qualification of equipment for the harsh environment that may be created by such a break.
- (d) Piping drawings for Units 1 and 2 affected by the material changes planned.

On the basis of the staff's review of operating plant experience to the extent related above, and in view of CEI's responses to OCRE, it would appear that all lines expected to experience steam erosion are located in the turbine building and their failure would have no impact on plant safety. However, the staff needs the information requested above in order to fully document its position on steam erosion effects on the Perry plant design in the SER and to the Licensing Board.

It is requested that the above information be provided no later than August 15, 1983. This deadline was discussed and agreed to by your staff.

Sincerely,

B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing

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OFFICE	DL:LB#1	DSI:ASB	DE:MEB	DE:MTB	DE:ENB	DL:LB#1
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DATE	07/21/83	07/21/83	07/21/83	07/21/83	07/21/83	07/21/83

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