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Fred Dacimo
Site Vice President
Administration

April 30, 2007

Re: Indian Point Unit No. 3
Docket No. 50-286

NL-07-054

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Response to Request for Additional Information Regarding the Request for Revision of Existing Exemptions from 10 CFR 50, Appendix R: One-Hour Hemyc Electrical Raceway Fire Barrier System, Fire Areas ETN-4 and PAB-2 for Indian Point Nuclear Generating Unit No. 3

REFERENCES:

1. Entergy letter dated July 24, 2006, F.R. Dacimo to Document Control Desk, "Request for Revision of Existing Exemptions from 10 CFR 50, Appendix R: One-Hour Hemyc Electrical Raceway Fire Barrier System, Fire Areas ETN-4 and PAB-2"
2. NRC letter dated March 15, 2007, J.P. Boska to M.R. Kansler, Indian Point Nuclear Generating Unit No. 3 - Request for Additional Information Regarding the Revision of Existing Exemptions from Title 10 of the Code of Federal Regulations Part 50, Appendix R Requirements (TAC No. MD2671)

Dear Sir or Madam:

By letter dated July 24, 2006 (Reference 1) Entergy Nuclear Operations, Inc. submitted a request for the revision of existing exemptions from the requirements of 10 CFR 50, Appendix R for one-hour Hemyc Electrical raceway fire barrier systems located in Fire Areas ETN-4 and PAB-2. The NRC staff requested additional information by letter dated March 15, 2007 (Reference 2) in order to complete its review of the exemption request. The purpose of this letter is to provide the responses to the questions transmitted in Reference 2. At this time, responses to questions 2 through 6 are provided in Attachment 1. The response to question 1 will be provided by May 31, 2007.

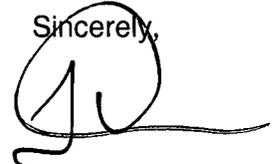
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If you have any questions or require additional information, please contact Mr. T.R. Jones, Manager, Licensing at (914) 734-6670.

I declare under penalty of perjury that the foregoing is true and correct. Executed on

April 30, 2007

Sincerely,



Fred R. Dacimo
Site Vice President
Indian Point Energy Center

Attachments:

- 1: Response to Request for Additional Information Regarding the Request for Revision of Existing Exemptions from 10 CFR 50, Appendix R: One-Hour Hemyc Electrical Raceway Fire Barrier System, Fire Areas ETN-4 and PAB-2

cc: Mr. John P. Boska, Senior Project Manager, NRC NRR DORL
Mr. Samuel J. Collins, Regional Administrator, NRC Region 1
NRC Resident Inspector, IPEC
Mr. Peter R. Smith, President, NYSERDA
Mr. Paul Eddy, New York State Dept. of Public Service

ATTACHMENT 1 to NL-07-054

**Response to Request for Additional Information Regarding
the Request for Revision of Existing Exemptions from 10 CFR 50, Appendix R:
One-Hour Hemyc Electrical Raceway Fire Barrier System, Fire Areas ETN-4 and PAB-2**

**ENERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNIT NO. 3
DOCKET NO. 50-286**

Response to Request for Additional Information Regarding the Request for Revision of Existing Exemptions from 10 CFR 50, Appendix R: One-Hour Hemyc Electrical Raceway Fire Barrier System, Fire Areas ETN-4 and PAB-2

Responses to the questions contained in the March 15, 2007 Request for Additional Information Regarding the Revision of Existing Exemptions from Title 10 of the Code of Federal Regulations Part 50, Appendix R Requirements (TAC No. MD2671) are as follows:

1. ***Which specific NRC-tested configurations were the IP3 modified Hemyc ERFBS configurations compared to? Are the modified configurations comparable to the industry-sponsored Hemyc test configurations? Do the results of the industry-sponsored Hemyc tests also support the licensee's conclusion on the 30-minute rating of the modified Hemyc ERFBS at IP3?***

Response

The response to this question will be provided by May 31, 2007.

2. ***The licensee indicated that administrative control measures are in place to limit transient combustibles in Fire Areas ETN-4 and PAB-2 to "moderate" quantities. Clarify exactly how much of which type of transient combustibles are allowed. Also, are there any specific locations in the above fire areas where transient combustibles are not allowed?***

Response

Per the current combustible control program procedure EN-DC-161 (this procedure replaced ENN-DC-161 which is cited in Reference 1), "Control of Combustibles," Fire Areas ETN-4 and PAB-2 are designated as "Level 2" combustible control zones, which constrain transient combustibles associated with any single job to the following moderate quantities:

- 100 pounds of fire retardant treated lumber, or
- 25 pounds of loose ordinary combustibles or plastics (i.e., plastics, wood, paper, etc.), or
- 5 gallons of combustible liquids stored in approved containers, or
- One pint of flammable liquids stored in approved containers, or
- One 20 ounce flammable aerosol can

Any planned introduction of more than the above quantities into these areas requires a prior review by Fire Protection Engineering, which will include the definition of additional

protective/compensatory measures as determined to be applicable. In Fire Area PAB-2, Fire Zone 1, two Maintenance activities that involve transient combustibles have been considered. These are lubricating oil change with a combustible load of 306,000 Btu, and inspection of mechanical components (e.g., valves, pumps, etc.) with a combustible load of 9,285,500 Btu.

Currently, there are no specific locations within Fire Areas ETN-4 and PAB-2 where transient combustibles are not allowed.

3. ***What type, how much, and how close in proximity are fixed combustibles located in the area of the credited Hemyc ERFBS in Fire Areas ETN-4 and PAB-2?***

Response

The areas traversed by the raceways that are protected by a credited Hemyc Electrical Raceway Fire Barrier System (ERFBS) in Fire Area ETN-4 are located in Fire Zones 7A, 60A, and 73A. Per the current combustible loading calculation, the fixed combustibles in Fire Zones 7A, 60A, and 73A include electrical cable insulation, and negligible quantities of incidental combustibles (e.g., combustible parts of emergency light units, nameplates, tags, signs, combustible parts of instrumentation and control equipment, etc.). Electrical cables not protected by a Hemyc ERFBS are routed throughout the upper and lower electrical tunnels and upper electrical penetration area, in the same area as, and in many locations contiguous to, the credited Hemyc ERFBS.

The area where the conduit that is protected by a credited Hemyc ERFBS in Fire Area PAB-2 is located in Fire Zone 1. Per the current combustible loading calculation, the fixed combustibles in Fire Zone 1 include lubricating oil associated with the three CCW pumps (approximately ½ gallon per pump), electrical cable insulation, and negligible quantities of incidental combustibles. The lubricating oil associated with each of the three CCW pumps is contained within the pump. The credited Hemyc ERFBS in Fire Zone 1 provides radiant energy protection of the normal power feed for the motor which drives 33 CCW Pump. This power feed is within the confines of the partial height barrier shielding 33 CCW Pump. There is no exposed cable within this confined area.

The table that follows indicates the combustible load for each type of combustible material in Fire Zones 1, 7A, 60A, and 73A.

Fire Zone / Floor Area	Combustible Material	Combustible Load (Btu)
1 / 1,420 sq. ft.	Pump lube oil	216,750
	Electrical cable insulation	4,498,220
	Incidental combustibles	568,000
7A / 2,975 sq. ft.	Electrical cable insulation	232,989,973
	Incidental combustibles	1,190,000
60A / 3,200 sq. ft.	Electrical cable insulation	289,889,617
	Incidental combustibles	1,280,000
73A / 1,350 sq. ft.	Electrical cable insulation	171,233,085
	Incidental combustibles	540,000

4. ***What fire scenarios are being considered for Fire Zone 1? What is the post-fire safe-shutdown strategy for Fire Zone 1; specifically under what circumstances must the credited Hemyc ERFBS survive the postulated fire?***

Response

Per the current Fire Hazards Analysis, the anticipated fire in Fire Area PAB-2, Fire Zone 1 is a rapidly developing lubricating oil fire associated with one of the three CCW pumps. The severity of such a fire would be limited (i.e., much less than a minute) given the amount of lube oil (approximately ½ gallon). Alternately, a slow developing fire is anticipated when considering the electrical cable insulation. The severity of a cable insulation fire would be approximately 2.5 minutes. Existing fire detection in the area is expected to provide early warning of such fires and indication to control room operators, who would in turn summon the Site Fire Brigade to control and extinguish the fire.

The post-fire safe shutdown strategy for Fire Area PAB-2, Fire Zone 1, relies on the operation of one of the three CCW pumps to supply water for cooling the charging pump seals and lubricating oil heat exchangers, and RHR pump seals and RHR heat exchangers. Cooling of the charging pump seals and lubricating oil heat exchangers is required for hot shutdown. The CCW system also provides cooling water for reactor coolant pump thermal barrier cooling.

The existing partial height barrier and protection of the normal power feed for the 33 CCW Pump motor is expected to provide protection of 33 CCW Pump against radiant energy

resulting from a fire involving 31 or 32 CCW Pump, and spatial separation between 31 CCW Pump and 33 CCW Pump along with the partial height barrier is expected to provide protection of 31 CCW Pump against fire involving 33 CCW Pump.

5. ***Are there drains or dikes provided in the areas of the component cooling water (CCW) pumps? If not, can the partial height Appendix R wall contain a spill of combustible fluid from entering or leaving the CCW Pump 33 area? How high is the partial-height wall?***

Response

The area where the CCW pumps are located is provided with two floor drains, one within the confines of the partial-height wall shielding 33 CCW Pump, and one southwest of 31 CCW Pump. The partial-height wall shielding 33 CCW Pump from 31 and 32 CCW Pumps is approximately 7 feet high.

6. ***Is there a potential for combustible fluids to drip from the 55' elevation into the CCW pump areas? Or a potential for a fire in the 15' elevation directly below the CCW pump areas that could impact both trains of CCW pumps?***

Response

The CCW pump area is located on the 41' elevation of the Primary Auxiliary Building (PAB). Since this area of the PAB is located on grade, there is no potential for a fire below the CCW pump area. There is grating open to the 55' elevation above a portion of Fire Zone 1. However, the grating is located approximately 9 feet to the east of the CCW pumps. Therefore, there is no potential for combustible liquids to drip onto the CCW pumps. Further, the area on the 55' elevation includes the component cooling heat exchangers, boric acid transfer pumps, nitrogen storage tanks, compressed air and gas cylinders, and air receivers, which are components that do not normally involve combustible liquids.