

JAN 21 1983

Docket No. 50-57

Mr. Louis G. Henry, Acting Director  
Nuclear Science and Technology Facility  
State University of New York  
Rotary Road  
Buffalo, New York 14214

Dear Mr. Henry:

We have been reviewing the documentation that you have submitted in support of your application for renewal of the operating license of your reactor facility. Additional review was performed during our visit to your facility in December 1982. During these reviews, several questions or apparent discrepancies have arisen for which we require answers in order to complete the review. Therefore, you are requested to provide written responses to the enclosed questions within thirty days of the date of this letter.

If you have questions concerning this request, please contact Robert E. Carter at (301) 492-9795.

Sincerely,

*/s/*  
Cecil O. Thomas, Chief  
Standardization & Special  
Projects Branch  
Division of Licensing

Enclosure:  
As stated

cc: See next page

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State University of New York

cc w/enclosure(s):

Director, Technological Development Programs  
State of New York Energy Office  
Swann Street Building - Core 1 - Second Floor  
Empire State Plaza  
Albany, New York 12223

New York State Development of  
Environmental Conservation  
ATTN: Director, Office of  
Environmental Analysis  
Albany, New York 12201

New York City Department of Health  
ATTN: Public Health Library  
125 Worth Street  
New York, New York 10013

Questions Related to the Review for

Renewal of License No. R-77

Docket No. 50-57

1. In several instances there appear to be discrepancies in documentation that should be resolved or justified.
  - a. Section V-D, Hazards Summary Report (HSR) Rev. II, 9/23/63 is not in agreement with section V-K of the Safety Analysis Report Update transmitted on 4/3/81, on the topic of burnup reactivity worth.
  - b. Section V, HSR, Rev. II, 9/23/63 discusses the change in reactivity caused by build-up of samarium. However, the Tech Specs (item 1.24 definitions) states that samarium will not be included.
  - c. Section V-B, HSR, Rev. II and section 3.1 of the Tech Specs are not in agreement. It is necessary that proposed changes in the Tech Specs be adequately justified.
  - d. Section VII-c, HSR Rev. II, 9/23/63 and the submittal dated May 8, 1974 do not appear to be entirely consistent.
2. During the visit to your facility in December, 1982, it was observed that the stack particulate monitor is continuously recorded on a strip chart in the control room. The Tech Specs (sec. 3.3.2.b) do not require this. Please explain, or resolve the difference.
3. As a result of discussions during the site visit, several points were discussed and tentatively resolved in a manner that requires justification and modification of documentation related to the following:
  - a. High excess K annunciation at the control console seems to serve no important safety function, and references to it in the documentation should be changed.
  - b. A reactivity worth on secured experiments other than that implied by the total worth of experiments is unnecessary, and any such limitation should be eliminated from the documentation.
  - c. References to shutdown margin should be updated to indicate that the minimum required margin is 0.5% plus the control blade of maximum worth.
  - d. Typographical error in SAR Update Sec. V-K "Sum of 1 to 6".
4. Provide documentation on cores in which the measured control-safety blade worths show typical high and low gang values. Include documentation on current core (graphs with core diagram would be satisfactory).

5. In support of your request to delete the automatic start feature of your core emergency spray system, provide reanalysis of loss-of-pool-water accident. Indicate the time to lose water and the time to reach maximum fuel temperature. Estimate the potential dose rate at the top of the tank.
6. Describe the system to be or being installed to indicate failure of the stack exhaust system. Indicate the status of the project.
7. Provide formal documentation of calculations of  $F_G$  (heat flux-hot spot factor) in the SAR Update Appendix D. Justify factors eliminated or changed from the original HSR calculations.
8. The primary water leakage problems that were repaired in 1978 were detected by increased tank water losses. What provisions have been made since then to monitor tank water losses, and what has been the experience? Do the old pipes that were blocked off in the repair serve any purpose or contribute to reactor safety?
9. What provisions have been made to prevent a recurrence of the collapse of the holdup tank in the primary coolant system?
10. Is the secondary coolant pressure always higher than the primary coolant pressure? If not, how would leakage of primary coolant into the secondary system be detected? What would be the probable consequence during routine operations? What would be the worst credible consequence if leakage occurred?
11. What is the maximum number of fuel assemblies that you propose may be stored in the hot cell? What limits this number?
12. If it is currently proposed that fuel assemblies be stored in a location other than the reactor pool or hot cell, provide an evaluation of criticality and personnel exposure considerations. What are the potential safeguards considerations?
13. Will the hydraulically actuated ventilation system dampers close if there is an electric power failure? How long can this operating capability be maintained if power is not restored? What is the spectrum of consequences?
14. How is the primary coolant flow rate controlled or changed?
15. What is the maximum power level in the fission plate when it is in place in the thermal column? What provisions are made for dissipating the thermal energy?
16. Describe the liquid radwaste management program. Specify the locations and sizes of hold-up/storage tanks; summarize the sampling procedures and analytical techniques.

17. Describe the solid radwaste management program, including segregation and handling practices. When are these materials transferred to a state license?
18. Describe the current administrative organization of the radiation protection program, including the authority and responsibility of each position identified.
19. Describe the policy and program to ensure that personnel radiation exposure and releases of radioactive material are maintained at a level that is "as low as reasonably achievable" (ALARA).
20. For the fixed-position radiation and effluent monitors, specify the generic types of detectors and their efficiencies and operable ranges.
21. For the fixed-position radiation and effluent monitors, describe the methods and frequency of instrument calibrations and routine operational checks.
22. Describe your current personnel monitoring program.
23. Provide a summary of the reactor facility's annual personnel exposures (the number of persons receiving total annual exposure within the designated exposure ranges, similar to the report described in 10 CFR 20.407(b) for the last 5 yr of operation).
24. Summarize the quantities of liquid solid radioactive waste resulting from reactor operations for the last 5 yr (total activity of each physical form at times of release or shipment for each year).
25. In order to facilitate its use, please arrange the definitions in your Technical Specifications in alphabetical order. This would be consistent with guidance in ANS-15.1.