September 22, 1982

Morton B. Margulies, Chairman
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. A. Dixon Callihan
Administrative Judge
Union Carbide Corporation
P.O. Box Y
Oak Ridge, Tennessee 37830

Dr. Richard F. Cole
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

In the Matter of
COMMONWEALTH EDISON COMPANY
(Byron Station, Units 1 and 2)
Docket Nos. 50-454 and 50-455

Dear Administrative Judges:

Enclosed please find a written Staff summary of a meeting held between the Staff and Applicant on September 8 and 9, 1982 to discuss the latter's volume control system at Byron. This meeting was the subject of a September 13, 1982 letter from Mr. Bruce von Zellen to Judge Margulies. Mr. von Zellen complains that he did not receive a copy of the September 2 Staff written notice of the meeting until September 13 and that the meeting was held in Chicago, rather than at the Byron plant as indicated in the meeting notice. Mr. von Zellen requests another meeting on the same subject.

A copy of the September 2 meeting notice was mailed to Mr. von Zellen on that date. The Staff cannot explain why it was not received by Mr. von Zellen until September 13. If the meeting had been on a contested issue in the proceeding, which it was not, the Staff may have provided a DAARE/SAFE representative with oral notice as well. As the enclosed meeting summary indicates, the meeting was held on September 8 in Chicago and at the Byron plant on September 9. Due to a ministerial error, this location change was not made on the September 2 meeting notice. The substance of the meeting is as described in the summary and no further meeting on the subject is planned. The Staff reviewer is, however, reachable to discuss the matter with anyone interested in doing so.

Sincerely,

Steven C. Goldberg
Counsel for NRC Staff

Enclosure as stated

cc Service List
(w/ encl.)

D507 pl

OFC	:OELD	:OELD	:	:	:	:	:
NAME	:SGoldberg:pl:	JGray	:	:	:	:	:
DATE	:9/ /82	:9/ /82	: 9/23/82	:	:	:	:

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Docket Nos.: STN 50-454
and STN 50-455

APPLICANT: Commonwealth Edison Company

FACILITY: Byron Station

SUBJECT: BYRON VOLUME REDUCTION SYSTEM

A meeting was held September 8, 1982 in the Sargent & Lundy offices in Chicago, Illinois and September 9, 1982 at the plant site in Byron, Illinois with representatives from Commonwealth Edison Company, Sargent & Lundy, Aerojet Energy Conversion Company, Southern Company Services, and the Rockford League of Women Voters. A list of attendees is included as Enclosure 1.

On September 8, 1982, the staff met with representatives of the Aerojet Energy Conversion Company and others to discuss Aerojet's draft responses to NRC questions, sent to Aerojet on April 28, 1982 (see Enclosure 2), on Aerojet's topical report AECC-2-P(NP). This topical report discusses a fluid bed dryer and a dry waste processor which will be utilized at the Byron, Braidwood, and Marble Hill Stations. The topical report is being referenced by the Commonwealth Edison Company in near-term operating license applications for the Byron and Braidwood Stations. The purpose of the meeting was to discuss those Aerojet responses which required additional information or clarification and to indicate those responses which were acceptable.

As a result of the meeting, Aerojet has agreed to modify their response to those questions which required clarification or additional information or data, as the NRC indicated. Approximately ten of the forty responses required modification. The NRC representative indicated that three responses (Nos. 1, 12 and 24) have not been reviewed by the NRC and that Aerojet would be informed later as to the adequacy of their responses. No new problems were identified. Aerojet is expected to respond to the NRC formally in October 1982.

On September 9, 1982, the staff representative visited the Byron Station to review the progress of installation of the volume reduction system. He was accompanied on this visit by Messrs. Brynildssen and Graham of the Commonwealth Edison Company and Ms. Morrison of the Rockford League of Women Voters.

Kenneth L. Kiper

Kenneth L. Kiper, Project Manager
Licensing Branch No. 1
Division of Licensing

Enclosures:
As stated

cc w/encls.: See next page

Mr. Louis O. DelGeorge
Driector of Nuclear Licensing
Commonwealth Edison Company
Post Office Box 767
Chicago, Illinois 60690

cc: Mr. William Kortier
Atomic Power Distribution
Westinghouse Electric Corporation
Post Office Box 355
Pittsburgh, Pennsylavania 15230

Paul M. Murphy, Esq.
Isham, Lincoln & Beale
One First National Plaza
42nd Floor
Chicago, Illinois 60603

Mrs. Phillip B. Johnson
1907 Stratford Lane
Rockford, Illinois 61107

Ms. Bridget Little Rorem
Appleseed Coordinator
117 North Linden Street
Essex, Illinois 60935

Dr. Bruce von Zellen
Department of Biological Sciences
Northern Illinois University
DeKalb, Illinois 61107

Mr. Edward R. Crass
Nuclear Safeguards and Licensing Division
Sargent & Lundy Engineers
55 East Monroe Street
Chicago, Illinois 60603

Myron Cherry, Esq.
Cherry & Flynn
Suite 3700
Three First National Plaza
Chicago, Illinois 60602

Mr. William Fourney
U. S. Nuclear Regulatory Commission
Byron/Resident Inspectors Office
4448 German Church Road
Byron, Illinois 61010

Ms. Diane Chavez
602 Oak Street, Apt. #4
Rockford, Illinois 61108

Mr. James G. Keppler
U. S. NRC, Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Joseph Gallo, Esq.
Isham, Lincoln & Beale
Suite 840
1120 Connecticut Avenue, NW
Washington, D. C. 20036

ENCLOSURE 1

September 8 and 9, 1982

Attendees

Nuclear Regulatory Commission

J. J. Hayes

Commonwealth Edison Company

L. Bowen
J. Brynildssen
Mr. Graham

Sargent & Lundy

J. Krohn
M. Leutloff
S. Boeing
R. Nelson

Aerojet Energy Conversion Co.

R. Frew
R. Garcia
S. Spas

Southern Company Services

J. McLeod

Rockford League of Women Voters

B. Johnson
Ms. Morrison

ENCLOSURE 2

ETSB QUESTIONS CONCERNING
TOPICAL REPORT AECC-2-P(NP)

1. WASH-1258 and ERDA-76-43 are inappropriate references on which to base expected annual volumes and activities for wet wastes and combustible dry wastes from nuclear power plants. System capacity should be based on data which incorporates recent operating reactor experience relative to the generation of radwaste and/or a more recent document such as NUREG-0782, "Draft Environmental Impact Statement on 10 CFR Part 61, Licensing Requirements for Land Disposal of Radioactive Waste". NUREG-0782, in turn, relies heavily on ONWI-20, "A Waste Inventory Report for Reactor and Fuel Fabrication Facility Wastes".

   All subsequent sections of the report which are based on or related to estimated annual quantities and activities of radwaste should be revised.

2. The report should be revised to include a description of design features or methods of operation that will minimize the probability or consequences of an explosion or overpressure transient, especially for the oil-burning mode of operation.

3. The report should estimate the anticipated levels of contamination that will build up on the refractory lining of the incinerator vessel and the frequency of refractory replacement.

4. The material used as the fluidized bed particle media should be specified.

5. Describe the smallest sized metal object capable of being detected by the metal detector and the smallest sized object (metallic or non-metallic) capable of jamming the shredder. With normal dry waste handling practices at an operating nuclear power plant, how frequently is it anticipated that the metal detector will alarm and that the shredder will jam or encounter an object that it cannot shred.

6. One mode of operation of the system consists of fluid bed incineration of the dry active waste in conjunction with operation of the fluid bed dryer at a low flow rate. Discuss the effect of reducing flow to the venturi scrubber on the scrubbing efficiency.

7. Provide an estimate of and supporting bases for the effectiveness of the decontamination of system components with warm water and/or decontamination solutions.

8. Provide information which supports the statement that regular maintenance can be accomplished in a two week period each year. Describe the components to be serviced and the servicing operations, the components to be inspected and the method of inspection, estimate total man-hours of effort to accomplish the maintenance, and expected lifetime of system components or component parts that will need repair or replacement.

9. Throughout the report, the design of the system should be compared to the criteria of Revision 1 of Regualtory Guide 1.143 issued October 1979, not the proposed revision issued for comment in July 1978. All references to BTP-ETSB 11-1 (September 11, 1975) should be deleted since it was replaced in its entirety by Regulatory Guide 1.143.

10. A discussion of bed media loss and makeup should be provided. Describe the rate at which the bed is lost due to carryover in both the dryer and incineration vessels and the rate at which bed media is lost due to continuous removal by the product conveyor from the dryer vessel. Describe the mechanism and instrumentation for bed media makeup. Provide an estimate of the respective percentages of bed media and dried salt that are carried out of the dryer vessel by the product conveyor.

11. Clarify whether area radiation monitors discussed in Section B.2.1.2 are within the scope of AECC supply.

12. Provide a more detailed discussion of the specific activity of the dryer/incinerator product for the types of waste streams encountered in both BWRs and PWRs using data found in NUREG-0782 or reported by utilities in the semi-annual effluent release reports. Identify the percentages of the product that will be classed as Class A segregated waste, Class B stable waste, and Class C intruder waste, per proposed 10 CFR Part 61.

13. Information should be included which provides reasonable assurance that solidification of the dryer and incinerator product will result in a waste form which is capable of satisfying the proposed requirements of 10 CFR Part 61.

14. Provide information regarding expected corrosion rates of system materials using feed composition (PVC content, e.g.) assumptions that are likely to bound the worst to be encountered in a normal operating nuclear plant. If test coupons to measure corrosion rates have been used, provide the results of that testing.

15. Describe the features incorporated in the design of the system to prevent, minimize, or clean plugged feed and/or venturi nozzles.

16. Describe the features incorporated in the design of the system to prevent "poisoning" of the charcoal adsorbers by contaminants in the off-gas stream such as SO_2 produced by the burning of rubber. Provide any test data available that document the concentrations of SO_2 that are expected to be encountered by the charcoal adsorbers and document the expected life of the filters in terms of acceptable removal efficiencies.

17. The volume of dry active waste 60,000 ft^3/yr presented in Table 7 appears to be in error. Please clarify (see Comment 1).

18. Overflow of condensate from the condenser sump is not discussed in the text. This stream should be discussed along with its contribution to the effluents (liquid) from the remainder of the plant. Is this flow recommended to be returned to the liquid waste storage tank for feed to the calciner or to the liquid radwaste treatment system for processing and release?

19. The dry waste processor has no provisions for removing ash, non-combustible materials or "clinkers" from the bed media. Without such a provision, this material may buildup in the dry waste processor. How is such a problem handled?

20. Figure 6 does not show the path of option mode 2. Provide a figure similar to Figure 6 for Optional mode 2 from which a material balance may be calculated.

21. It would seem that decontamination nozzles would also be useful for such equipment as the bed storage and transfer hopper (H-4) trash hoppers (H-3A and H-3B) and condenser (S-3) in addition to the major process vessels and selected hoppers which have such nozzles. Estimate the levels of contamination on these components and describe the decontamination methods that will be used prior to maintenance on this equipment.

22. No volumes of decontamination solutions and associated radioactivity content have been discussed in the topical report nor has the method to treat this solution been discussed. Include such information in the topical report. Additional liquid and gaseous effluents which would result from the decontamination solution should also be addressed.

23. Is the offgas system designed to the requirements of ANSI N509-1980?

24. Justify the projected processing time of 3600 hours per year for the Byron/Braidwood Stations (1120 MWe) when Table 6 shows that at a PWR the system would operate for 6714 hours per year, when Figure 6 shows a solids feed rate of 5-10 ft^3/hr and Table 7 shows an annual volume of dry active waste of 60,000 ft^3/yr. (Also, see Comment 1)

25. Operating conditions for combusting contaminated oil are not provided in the topical report. Such information should be provided.

26. Describe any limits that AECC recommends on the amounts of plastics that may be processed in the incinerator.

27. What is the maximum feed rate of the fluidized bed dryer when it operates?

28. It is the NRC staff's understanding that a second venturi scrubber was added to the design. The topical report should include details on this component and the reason for this design change.

29. Where is the backwashable filter F-3 located? The appropriate figures in the report should be revised to show this component.

30. Describe where liquids from the low point drains are routed.

31. The design temperature of the charcoal adsorbers (T=210 F, Table 12) is only 10 degrees greater than that of the maximum temperature expected. Is this sufficient to handle a transient involving lack of cooling?

32. It is indicated that solids buildup on the bed increases the bed volume. Describe the respective percentages of bed media and dried feed being removed by R-2. Doesn't solids buildup also occur in the incinerator? If so, why isn't there a mechanism to remove some of the bed volume to handle this buildup of material?

33. Table 20 should be revised to indicate what parameter(s) are being monitored for process control.

34. Provide the results of tests conducted to demonstrate the successful burning of contaminated oil.

35. Page 14 indicates that the typical processing rate for liquid wastes range from 28 gph at 25 weight % solids to 75 gph at 10 weight % solids, yet the summary of tests presented in Table 23 shows when the

weight % solids was in the range of 25% the feed rate was usually considerable lower than the 28 gph. The same comment holds for 10 weight% solids. The maximum feed rate was approximately 50 gph versus 75. Provide the data to show that the VR equipment will process the volume of waste and solids associated with the volumes on page 14.

36. The NRC DF of 10^4 assigned in our SER for AECC-1-A for iodine would no longer to justified since the amount of gas recycled to the fluid bed dryer has been reduced and the amount of gas discharged has been increased. The value of 10^4 would be divided by 8.

37. Were measurements conducted during the course of operation of the fluid bed dryer and the incinerator to determine DFs for the offgas system and various pieces of equipment? Such information should be provided for operation under both conditions, to the extent it is available.

38. Document that the DF (especially for iodine) does not change when water is used for the venturi scrubber versus the use of evaporator liquid concentrates; provide information also that discusses the dependency of the system iodine DF on the type of liquid waste being processed.

39. Contributions to Appendix I doses from various pathways such as cow milk ingestion, inhalation, vegetable ingestion, ground plane exposure, etc., should be calculated and provided in the topical report.

40. Provide the concentrations of HCl and H_2SO_4 expected in the offgas based upon processing PVCs, rubber, contaminated oil, etc., and include the test data to substantiate these concentrations.