

JUL 22 1973

Docket No. 50-286

ENVIRO - FILE

Daniel R. Muller, Assistant Director for Environmental Projects

FORTHCOMING MEETING WITH CONSOLIDATED EDISON OF NEW YORK AND ORNL PERSONNEL

Time: 10:00 a.m.

Date: July 25, 26, 1973

Location: Conference Room of the Environmental Sciences Building  
Oak Ridge National Laboratory  
Oak Ridge, Tennessee

Purpose: To discuss modeling as outlined on attached agenda.

Participants: ORNL: C. M. Carter  
C. C. Coutant  
A. R. Eraslan  
C. P. Goodyear  
D. J. Nelson  
R. M. Rush  
B. W. Rust  
M. Siman-Tov  
W. VanWinkle

Con Ed: John Lawler - Q.L.M.  
R. Norris - Q.L.M.  
G. Lauer - N.Y.U.  
V. Kaczynski - T.I.  
D. McKenzie - T.I.  
T. Cannon - T.I.  
R. Alevras - Con Ed  
R. Horton - Con Ed  
J. Szeligowski - Con Ed  
Joyce Davis - Con Ed  
H. Voigt - L.L.L. & M

AEC: Mary Jane Oestmann  
G. W. Knighton

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George W. Knighton, Chief  
Environmental Projects Branch #1  
Directorate of Licensing

Enclosure:  
Agenda

OFFICE ▶	cc: See next page	L:EP-1			
SURNAME ▶		GW Knighton			
DATE ▶		7/23/73			

cc: w/enclosure  
AEC PDR  
Local PDR  
A. Giambuso  
D. R. Muller  
Meeting Attendees

OFFICE ▶						
* SURNAME ▶						
DATE ▶						

JUL 17 1973

Docket Nos. 50-3  
50-247  
and 50-286

## ENVIRON, FILE (NEPA)

Daniel R. Muller, Assistant Director for Environmental Projects, L  
THRU: G. W. Knighton, Chief, Environmental Projects Branch No. 1, L

### MEETING WITH CONSOLIDATED EDISON ON THE RADWASTE SYSTEM FOR INDIAN POINT UNITS 1, 2, and 3

On April 23, 1973, a meeting was held at the AEC Headquarters with representatives from Consolidated Edison and the AEC staff to discuss the present and future radwaste systems of Indian Point Units 1, 2, and 3, the radiation in-plant monitoring program, the radioactive releases and location of release points. The major conclusions reached were that (1) Con Ed is to supply a drawing of the in-plant monitoring locations and (2) a letter is to be sent to Con Ed regarding requirements and schedule for plant modifications and radiological monitoring requirements. The modifications involve (a) interties of the steam generator blowdown from Unit 2 to Unit 1 and Unit 3 to Unit 1 with treatment of iodine releases from the flash tank in the turbine condenser of Unit 1 and demineralization and filtering of the liquid discharges from the flash tank prior to discharge to the Hudson River and (b) treatment of iodine releases from the containment and primary auxiliary building exhausts through the use of charcoal adsorbers.

The Unit 1 modified steam generator blowdown treatment system has already been installed, and the Unit 2 modifications will not be installed, according to the applicant, until the first refueling cycle (about June 1975). Although the Unit 3 radwaste system is described in the applicant's Supplement No. 2 to the Environmental Report to include the two types of modifications, the applicant is not planning to install the equipment until after startup of Unit 3.

Docket Nos. 50-3  
50-247  
and 50-286

Details of Meeting with Consolidated Edison

On The Radwaste Systems at Indian Point Units Nos. 1, 2, 3

I. General

On April 23, 1973, a meeting was held with Con Ed to discuss its radwaste system, its proposed modifications, and its radiation plant protection monitoring systems. H. Specter, LPM for Unit 3, led the discussion by requesting Con Ed to present an integrated view of all the plants on the site. Con Ed was requested to discuss what present systems exist for each unit, what modified systems Con Ed plans to have in the future, what the releases are and where the release points are as a function of the system design. Scope of discussion included:

- (1) Radiation monitoring of plant effluents according to Safety Guide 21
- (2) Full-time availability of steam generator blowdown treatment system on each unit
- (3) Technical Specifications
- (4) Schedule for modifications
- (5) Redundant hydrogen/oxygen analyzer for gas processing system
- (6) Area monitors throughout inside and outside plant buildings and onsite monitors.

II. Present Plant Design, Modification and Monitoring Problems

Con Ed provided a description of how the present radwaste for each unit worked and assumed 0.2% fuel leakage and 20 gpd leakage of the primary to the secondary system. The present steam generator blowdown (SGBD) treatment system involves collection of SGBD in a monitored flash tank which vents the gases directly to the atmosphere and discharges the liquid without further treatment to the Hudson River. Each of the four SG for Units 2 or 3 has two blowdown lines containing a manual shutoff valve

and two trip valves. A bypass sampling system for each line in the containment building is provided in which a small flow from each line is combined to form a composite sample and is monitored for radiation. In the event of a high radiation signal both the trip valves in the sample line and blowdown lines will automatically close. Otherwise, all the SGBD from each SG in its own unit are combined in its own flash tank for flashing. Con Ed plans to operate the flash tank in each unit when the radioactivity in the SGBD is below a set point. If above the set point, Con Ed will treat the SGBD from Unit 2 and Unit 3 in the flash tank in Unit 1 via the intertie system. The greatest potential source of liquid radioactivity to the environment is the SGBD from either Unit 2 or 3 when the radioactivity is not treated through the intertie with Unit 1.

The modifications Con Ed is considering is to intertie the SGBD from Unit 2 to the Unit 1 SGBD treatment system and from Unit 3 to the Unit 1 system. The Unit 1 system has recently been modified in which the condensate from the Unit 1 flash tank can pass through demineralizers and filters and is monitored, and discharged into the Hudson River. The vented gases are scrubbed by the turbine condenser to reduce the amount of radioiodine released to the atmosphere. Description of the modifications of the Unit 1 radwaste system was provided in the December 15, 1972 semi-annual operating report for Unit 1.

In regards to item (1) above, W. Eister had had earlier phone conversations with Con Ed who agreed to provide Safety Guide 21 monitoring requirements particularly to correct for the applicant's lack of providing charcoal adsorbers for radioiodine removal and sampling for iodine except for the steam generator blowdown (SGBD) vent. At the meeting, Eister reported problems of monitoring of steam generator blowdown, of sampling systems for iodine-131, and the hydrogen-oxygen gas analyzer on the gas decay tank system. Con Ed in the meeting said it is difficult to measure iodine-131 in the vented gas from the flash tanks used for the SGBD treatment system. Con Ed reported installing a radioiodine sampler on the Unit 1 stack and has had difficulty in obtaining adequate gaseous samples for measurement.

In reference to item (2) above, Con Ed indicated its intent to provide full time capability for the SGBD treatment during operation of each reactor. In response to questions from Con Ed regarding the need for full time use of the SGBD cleanup system, Eister told Con Ed of the necessity of operation of each unit with full time treatment of the radwastes. However, Con Ed opposed Eister's position because of the difficulty of measuring the SGBD vapor effluent. The position of the Effluent Treatment systems Branch is that all SGBD requires treatment.

According to Con Ed, after the interties from Unit 2 to Unit 1 and Unit 3 to Unit 1 are installed, only when a preset level of radioactivity in the steam generator blowdown from either Unit 2 or 3 is exceeded, will the blowdown be treated through the modified Unit 1 system via a manual valve switch. There will be continuous gross beta/gamma monitoring in the steam generator blowdown from Unit 2 or 3 to control the switchover to Unit 1. Normally the liquids from the flash tank at each unit are discharged directly into the river, but will be shut off automatically if levels exceed the preset value. Con Ed, however, expects that there will be very few fuel leaks with zircaloy clad fuel but only leakage of activated crud between the primary and secondary loop. The set point for the switchover to the Unit 1 cleanup system is  $4 \times 10^{-4}$   $\mu\text{Ci/cc}$  in the blowdown liquid. Under these conditions up to this set point about 29% of the SGBD could be released at the blowdown rate of 10 gpm without treatment and 91% at the blowdown rate of 50 gpm. The SGBD released without treatment from either Unit 2 or 3 could represent 22 Ci/yr in liquid effluents and 0.48 Ci/yr iodine-131 in the vapor. Con Ed thought that the limits of sensitivity of measurement was about  $10^{-5}$ .

Con Ed feels that there is no problem regarding the need for treating the steam generator blowdown. Only by monitoring at the  $4 \times 10^{-4}$   $\mu\text{Ci/cc}$  level will the Unit 1 system be needed and Con Ed feels that with zircaloy clad fuel elements no fission products to speak of will end up in the steam generator blowdown.

At Unit 1 there will be sufficient capability for treatment of blowdown from Unit 3 100% of the time Unit 3 is in operation. During the time Unit 1 is shut down, the vapor vented from the flash tank in each unit is supposed to be released directly to the atmosphere or could be treated by passing the gas through the turbine condenser. In addition, service water can be used to spray cold water to reduce the pressure and convert iodine-131 to the liquid state in the flash tank, if required. This was not described in the FSAR but could largely reduce the vapor release. Con Ed indicated that it would, if requested formally, provide the full time capability for treatment and would submit a proposed method for monitoring and treating the SGBD to meet ALAP and SG 21 requirements. However, Con Ed's position is that only when significant amounts of radioactivity are present in the secondary coolant in Unit 2 or 3 will the Unit 1 treatment system be used.

The Environmental Project Manager mentioned to Con Ed that we would send Con Ed a letter discussing the requirements for plant modification based on limits of releases of 5 Ci/yr/unit of liquids and 5 mrem/yr for iodine at the site boundary, whichever is the lower limiting condition. Eister

would like to have assurance that the radwaste system and the radiation plant monitoring system will be capable of treatment of wastes and measurement of all releases, respectively. Eister wants Con Ed to provide a detailed analysis on operating conditions in regard to plant monitoring to assure releases will be measured and controlled.

At Unit 1 in the waste disposal system all floor drains, equipment drains, etc. feed into one of four 75,000 gallon waste holdup tanks, which have a five day holdup capacity, and then the waste is processed through evaporation. The waste distillate is discharged after a gross beta/gamma count has been taken on composite samples from monitor tanks. Discharge to the discharge canal is limited to  $1 \times 10^{-7}$   $\mu\text{Ci/cc}$  (10 CFR 20 limits). Laundry tanks are isolated from the waste disposal system and effluents are discharged directly to the discharge canal. Detergents which are present in the laundry discharges cause foaming. One laundry serves all 3 units.

All monitoring is set up to meet the Radiological Technical Specifications, which, according to Con Ed, are set at the  $1 \times 10^{-7}$   $\mu\text{Ci/cc}$  limit for liquids. A question was raised as to how can one know what the total radioactivity level released really is. Con Ed prepares a composite sample by grab sampling, which is averaged over one day. Administrative controls are set for daily control on blowdown. The set point of  $4 \times 10^{-4}$   $\mu\text{Ci/cc}$  is based on the worst possible conditions. Con Ed described the reasons for setting this limit and stated that if a spike of iodine-131 shows up, a valve automatically trips and shuts off any discharge to the river. Con Ed said its radiation doses will be well within 5 mrem/year.

The only liquids not discharged directly to the river are the sanitary discharges which are sent to septic systems.

Monitoring techniques involve NaI(Tl) gamma scanning to obtain the quarterly curie limit of 1.25 Ci. Samples are analyzed that are also taken each day from each of the four boilers for Unit 1. The total curies and the volume released are recorded.

The gas processing system is analyzed by obtaining a composite sample at the end of each month from venting the gas decay tanks. No treatment of the gases except holdup (up to 60 day capacity for Unit 1 and 45 day each for Unit 2 and Unit 3). Normal holdup of gases involves about 1 month (according to Con Ed a minimum of 20 days holdup is really used). Gross counting and isotopic analysis are done on a monthly basis. Most of the gases are released via the air ejector, or monitored and sent to the Unit 1 stack. The containment building ventilation system is monitored and the gases are sent to the Unit 1 stack. A sweep gas system also is in continuous use with a recombiner of hydrogen/oxygen gases. However, no gas stripper is used.

The ventilation system for the fuel handling building, nuclear system building, and chemical system building has particulate and gas monitors which are set well below the MPC levels. Charcoal adsorbers will be installed to clean up the containment building purge and the primary auxiliary building for Units 2 or 3. Con Ed says it plans to install charcoal adsorbers costing about \$4 million for each unit by June 1975. According to Con Ed, iodine-131 is determined before discharge and the activity is vented through the Unit 1 ventilation system. Samples are withdrawn for iodine measurement prior to release up the Unit 1 stack. Gases in the nuclear service and fuel handling buildings can be discharged directly to the atmosphere off the roof vent or switched to the Unit 1 system. Activities are detected through various volumes of ventilation gases from different buildings. Con Ed described the techniques to measure the contaminated gases via Gelman filters. According to Con Ed, there is no problem of handling gaseous discharges as long as most of the gases are sent to the Unit 1 stack. For any potential accidents, special filters, monitors and procedures are developed if a high reading on stack monitors occurs. The containment building ventilation system can be cut off to control releases of gases.

The waste evaporator operations involving 2 gpm up to 25 gpm capacity were described. Con Ed is considering combining the waste treatment of all three units at Unit 1. Larger evaporators would be used. Details of the operation of the radwaste system can be found in the Unit 2 FES. According to Con Ed, each of the three units are licensable.

### III. Technical Specifications

Con Ed discussed the effluent release limits of the Tech Specs for each unit which are set to meet 10 CFR Part 20 limits. Con Ed feels its radwaste system will meet requirements of ALAP. The Tech Specs for Unit 2 are the same for Unit 1 but those for Unit 3 are more restrictive than Unit 2 since they apply to the whole station. In terms of gaseous releases, the action limits are 10 CFR Part 20 for instantaneous releases and 10 CFR Part 50, Appendix I for average releases. Reporting requirements are set if twice the Tech Spec limit is exceeded and shutdown if eight times the Tech Spec limit is exceeded.

Con Ed thought limits set by the Tech Spec would preclude operation of Unit 3 unless special provisions were made. Eister indicated that based on his evaluation, Con Ed would have to report an event in which twice the design objective has been exceeded. The releases can not reach eight times the design objective limits without shut down. Con Ed said that the Unit 2 Tech Specs had a fence post limit which would limit this operation (an instantaneous 1/700 of 10 CFR Part 20 at the fence post).

A question was raised by Con Ed as to the chances of borrowing from one of the three units for the total amount of 15 Ci/yr. We stated that each unit would be limited by 5 Ci/yr. Con Ed feels that its assumptions and the AEC's assumptions are no good to estimate the 5 Ci/yr limit. | ?

Con Ed in its Tech Specs for Units 1 and 2 essentially has no milk monitoring requirement although Con Ed says it is now taking milk samples from a nearby dairy (seven miles from the plant). This will be required by modifying the present Tech Specs for radiation environmental monitoring for Unit No. 2.

#### IV. Schedule for Plant Modifications

A discussion followed regarding the time to install the modifications for the Units 2 and 3 steam generator blowdown treatment system and the use of charcoal adsorbers in the CBP and PAB for all three units. According to Con Ed, these changes would not be ready until June 1975 at the first refueling of Unit 2. However, Unit 3 will be ready to load fuel by June 1974. Furthermore, if Unit 1 is not operational, Con Ed will not use the condenser to cool the vapors from the flash tank at Unit 1.

A letter will be sent to Con Ed to clarify the AEC's position regarding requirements for the timing of modifications and in-plant radiation monitoring measurements and requirements for monitoring iodine releases and environmental surveillance requirements.

#### V. Area Monitors

There are several area monitors for Unit 2: one for the radiochemistry laboratory at Unit 1, the second in the shipping and receiving area, a third in the sampling room next to the drumming stations for handling solid radwaste, and the fourth across the hall from the evaporator. There was a question regarding the need for one in the letdown pipe area. Con Ed also discussed the alarm signals for various radiation levels in different buildings. Con Ed will provide a drawing showing the area monitoring locations and the locked areas in the auxiliary building and other buildings to limit personnel access.

#### VI. Conclusion

In summary, a letter will be sent to Con Ed regarding the schedule for requirements to install needed modifications, and in-plant and environmental monitoring requirements.

Con Ed is to send the AEC a drawing on area monitoring locations for release points.

# ENVIRON, FILE (NEPA)

Docket Nos. 50-286 ✓  
and 50-247

JUN 5 1973

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D. R. Muller, Assistant Director for Environmental Projects, ORNL  
 THRU: G. W. Knighton, Chief, Environmental Projects Branch No. 1/S

## HIGHLIGHTS OF THE INDIAN POINT UNIT NO. 3 SPECIAL PREHEARING CONFERENCE

On May 21, 1973, the ASLB ordered a special prehearing conference to be held at Croton-on-Hudson, New York, on identifying specific contested issues, schedules for issuance of the DES, FES, SER, and startup and conclusion of the hearing for Indian Point Unit No. 3. Environmental issues are the major issues of controversy, including the need for power. Radiological issues will be questioned but the ASLB will not make any decisions in this regard. The hearing is scheduled to begin on February 4, 1974 and Con Ed plans to submit its 1973 annual report on ecological studies on February 15, 1974. The ASLB wants to run a continuous hearing and conclude by the end of March.

Major points of this hearing are enclosed. Details of the hearing can be found in the transcripts.

Original signed by  
 M. J. Oestmann

M. J. Oestmann, Project Manager  
 Environmental Projects Branch #1  
 Directorate of Licensing

Enclosure:  
 As stated

CRESS	OFFICE ▶	L:EP-1	L:EP-1			
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	SURNAME ▶	MJ Oestmann	GW Knighton			
	DATE ▶	6/5/73	6/5/73			

Major Points of the Special Prehearing  
Conference for Indian Point Unit No. 3  
May 21, 1973

1. Licensing Action

On October 25, 1972, a Notice of Consideration of Issuance of Facility Operating License and Notice of Opportunity for Hearing" for Indian Point Unit No. 3 was issued in the Federal Register.

On February 9, 1973, an ASL Board consisting of S. Jensch, Chairman, Dr. J. C. Geyer, and Mr. R. B. Briggs was appointed to rule on the proceedings in the Unit No. 3 hearings. On that same date, another ASLB, called the Intervention Board, was established with E. Bowers, Chairman, to rule on petitions to leave to intervene. This Board ruled, on February 28, 1973, regarding those persons which have a right to intervene. They include the Hudson River Fishermen's Association, Save Our Stripers, and the State of New York. This Board denied the petitions to intervene by the Cortland Conservation Association, Inc. and Mary Hayes Weik.

The Attorney General of New York filed a late petition to intervene in addition to that of the State of New York. The Intervention Board has yet to respond to this petition but the subject of who represents the State in the proceedings was discussed at the May 21, 1973 hearing. A ruling by the Intervention ASLB and the Hearing ASLB will be forthcoming within the next few weeks as to this matter. The ASLB requested a statement of position from the Attorney General in this hearing and an order will be made on this subject by the ASLB in the near future.

2. At the May 21, 1973, the ASLB pointed out that no evidence nor limited appearance would be permitted at this particular time but that the purpose of this special prehearing conference was to ascertain if there is a basis for arriving at some stipulation among the parties; to develop methods by which evidence may be presented; to outline the areas of concern of the parties; and to carry out discovery procedures and exchange of interrogatories among the parties in order to resolve matters existing between parties. The Board also offered to convene as many prehearing conferences as needed to present evidence and to expedite procedures in the hearing.

3. Schedules for issuance of the DES on June 29, 1973, and FES on October 12, 1973 and the Safety Evaluation Report on July 16, 1973 and ACRS Meeting on September 7, 1973 and Supplement to the Safety Evaluation on October 12, 1973 were presented by S. Treby, OGC. Con Ed stated that Unit No. 3 would be ready for core loading on April 1, 1974.
4. HRFA and SOS outlined the environmental issues of concern which include the same as for the Unit No. 2 proceeding. They will involve the added impact on the fishery from Unit No. 3 and include the issue of need for power. Con Ed vigorously opposed this issue. The ASLB asked Con Ed if the same recommendation for closed cycle cooling by the staff were to apply to Unit No. 3 as to Unit No. 2, would Con Ed ask to delay this imposition to complete the ecological studies. Con Ed said yes. The ASLB further asked about the consideration of the time to operate the plant, not the need for the plant, and the conditions to operate the plant at reduced power levels. The ASLB ruled that need for power would be an issue of the hearing.
5. The Board was concerned about the letter dated May 9, 1973 from the Mayor of the Village of Buchanan regarding local ordinances of restricting natural draft cooling towers because of their height. The Board and HRFA suggested that further proceedings on this subject may result in reopening the hearing for Indian Point Unit No. 2.
6. A stipulation between Con Ed and the intervenors is being worked out to incorporate the particular pages of the Unit No. 2 transcripts into the Unit No. 3 hearing record. OGC should definitely participate in any such stipulation. On May 16, OGC wrote the intervenors that the staff would agree to stipulate the entire record as to environmental issues for Unit No. 2.
7. Interrogatories and Discovery would begin in June with a month set up for reply.
8. After issuance of the DES and FES, the intervenors want to advise the Board of specific issues which are different from those in the Indian Point Unit No. 2 proceedings for presentation in the Unit No. 3 hearing.
9. The intervenors requested through informal discovery, the final research materials and final statements of research from the applicant. The staff also will request such information, but on a monthly basis since we would not be able to review the material in the middle of the hearing in February 1974.

10. Con Ed on May 14, 1973 filed a motion to consolidate the HRFA and SOS participation in the hearing.
11. The State of New York is concerned (1) whether operation of Unit No. 3, in conjunction with the other existing plants at the same site, will have a significant adverse effect on the fisheries and (2) whether the NYS thermal criteria will be met. NYS wants discovery on this subject.
12. Con Ed wants in the Unit No. 3 hearing only new information or supplemental information that either was not available for Unit No. 2 or was not brought out clearly in the Unit No. 2 hearing. However, Con Ed stated that final resolution of issues will depend on the ASLB initial decision for Unit No. 2. Con Ed plans to submit discovery requests to the Staff after issuance of the DES for Unit No. 3. Further issues will be identified after issuance of the FES.
13. Hearing schedule - Con Ed requested and ASLB agreed to, the start of the hearing on February 4, 1974 and Con Ed would issue its 1973 annual report on ecological studies on February 15, 1974. Con Ed would file additional direct testimony shortly prior to the February 4, 1974 date. The hearing would essentially be continuous and conclude by the end of March.
14. The ASLB considered the possibility of having some of the hearing scheduled in the Washington area since the public apparently uses the local public document room to keep informed by reading the transcripts rather than attend the hearings.
15. The ASLB requested the attorneys for the parties in the proceeding to submit a stipulation setting forth the kind of order that the Board will be directed to issue of the matters accomplished after the special prehearing conference.
16. The ASLB stated that it would have inquiries as to radiological safety issues (including quality assurance) which were not included in this hearing. Con Ed objected strongly to this subject based on the Palisades case by the Appeal Board. The Board stated that it could not make any decisions on safety issues but reserves the right to ask questions on the matter.