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FILE ENVIRO

FROM: Wisconsin Public Service Company Green Bay, Wis. 54305 E.W. James	DATE OF DOC: 10-19-72	DATE REC'D 10-19-72	LTR X	MEMO	RPT	OTHER
TO: Mr. Daniel R. Muller	ORIG 3 signed	CC 37	OTHER	SENT AEC PDR ✓ SENT LOCAL PDR ✓		
CLASS: (P) PROP INFO	INPUT	NO CYS REC'D 40		DOCKET NO: 50-305		

DESCRIPTION: Ltr re our 9-29-72 ltr... furnishing comments on draft Enviro statement & trans:

ENCLOSURES: WPS Comments on Federal, State, & Local Agencies Comments on AEC Draft Enviro Statement(11 different agencies sent in comments)(11 encl's).....

(40 cys ea encl rec'd)

PLANT NAMES: Kewaunee Plant

DO NOT REMOVE

ACKNOWLEDGED

FOR ACTION/INFORMATION DL 10-19-72

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Regulatory File Cy.

WISCONSIN PUBLIC SERVICE CORPORATION

P.O. Box 1200, Green Bay, Wisconsin 54305

October 19, 1972

Mr. Daniel R. Muller
Assistant Director for Environmental Projects
Directorate of Licensing
U.S. Atomic Energy Commission
Washington, D.C. 20545

Dear Mr. Muller:

Subject: WPS Comments on Federal, State and Local Agencies' Comments on the AEC Draft Environmental Statement

AEC Docket 50-305

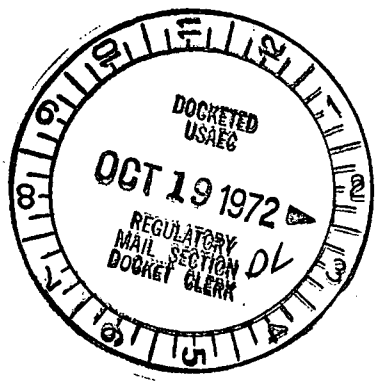
Pursuant to your letter of September 29, 1972, we submit herewith forty (40) copies of our comments on the reviews received from the agencies noted on the attachment. We have transmitted three (3) copies to Mr. W. C. Redman, Argonne National Laboratory, per your request.

Very truly yours,

E. W. James, Senior Vice-President
Power Generation & Engineering

EWJ:sna

Attach.



5702

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Attach.

5702

Regulatory File Cy

Received w/Ltr Dated 10-19-72

LIST OF COMMENTS TRANSMITTED

Name of Facility: Kewaunee Nuclear Power Plant

Applicant: Wisconsin Public Service Corporation

Docket No.: 50-305

Comments Transmitted: Letter dated August 11, 1972, from the Advisory Council on Historic Preservation

Letter dated August 11, 1972, from the State Historical Society of Wisconsin

Letter dated August 14, 1972, from the Dept of the Army, Chicago District, Corps of Engineers

Letter dated August 28, 1972, from the State of Wisconsin Public Service Commission

Letter dated August 29, 1972, from the Assistant Secretary of Commerce

Letter dated September 8, 1972, from the Department of Agriculture

Letter dated September 11, 1972, from the Department of Transportation

Letter dated September 14, 1972, from the Assistant Secretary of Commerce

Letter dated September 14, 1972, from the Federal Power Commission

Letter dated September 22, 1972, from the Environmental Protection Agency

Letter dated September 25, 1972, from the Department of Natural Resources, State of Wisconsin*

* This letter not included as part of the September 29 transmittal from AEC.

WPS COMMENTS TO AGENCY COMMENTS ON THE
AEC DRAFT ENVIRONMENTAL STATEMENT

Advisory Council on Historical Preservation

Comment

The final statement should contain evidence of contact with the Historic Preservation Officer for the state involved and a copy of his comments concerning the effect of the undertaking upon historical and archeological resources.

Response

Letter Mr. James Morton Smith to Mr. James Evans, President Kewaunee County Historical Society dated August 11, 1972 responds to the comment made in the letter from the Advisory Council on Historical Preservation.

WPS references Page 2.3-3 which verifies that a search of the records was made and the results agree with Mr. Smith's conclusion that "Our records indicate that no historical sites will be affected by the Project."

WPS COMMENTS TO AGENCY COMMENTS ON THE
AEC DRAFT ENVIRONMENTAL STATEMENT

Department of the Army - Chicago District, Corps of Engineers

Comment/Conclusion

The statement is considered satisfactory.

Response

No comment required by WPS.

WPS COMMENTS TO AGENCY COMMENTS ON THE
AEC DRAFT ENVIRONMENTAL STATEMENT

Public Service Commission - State of Wisconsin

Comment/Conclusion

In conclusion, we are basically in agreement with and endorse the findings and the need for power in Section X of the AEC staff's Draft Environmental Statement.

Response

WPS agrees with and supports the findings of the Public Service Commission.

WPS COMMENTS TO AGENCY COMMENTS ON THE
AEC DRAFT ENVIRONMENTAL STATEMENT

Department of Commerce - Letter dated August 29, 1972

Comment/Conclusion

1. On page II-28, the conditions described in the last paragraph are more characteristic of a modified monsoonal effect than lake breeze. The lake breeze is as described in the very last sentence on the page (i.e., a diurnal change in wind).

Response

1. We suggest a rewording of the paragraph to emphasize daily shifts and weak breezes which are more representative of lake breezes.

Comment/Conclusion

2. On page II-29, the conclusion shown in the last sentence of paragraph 2 is hardly valid when based on two situations. Normally turbulence would be expected to be greater with higher wind speeds.

Response

2. Data was recorded for a nineteen-month period and the maximum persistence existed for a period of 25 hours each time (twice) and each time wind turbulence was low with high average wind speeds. We believe that the conclusion arrived at by the staff was valid. It may be more correct to use the phrase "the variance of the azimuthal wind direction angle" rather than "wind turbulence" since wind turbulence is proportional to

Department of Commerce - Letter dated August 29, 1972 (Continued)

the product of wind speed and the variance of the azimuthal wind direction angle.

Comment/Conclusion

3. In previous comments to the AEC Division of Reactor Licensing, dated May 17, 1972, we have computed a maximum average annual concentration of 9×10^{-7} sec m^{-3} at a distance of 1200 m with winds from the north northeast. This is in close agreement with the applicant's value as shown in figure 2.7-6 of the Final Safety Analysis Report dated January 27, 1971. The AEC staff analysis of the radiological impact of routine releases (see page V-28) does not specify their resulting average annual concentration and we can only assume it is in general agreement with the applicant's value.

Response

3. We suggest that paragraph two under Radioactive Material Released to the Atmosphere be reworded to indicate that the 0.32 mrem/year is the maximum annual average dose for an individual sector and that the annual average dose for all sectors would be less than this amount.

Comment/Conclusion

4. We have not been able to evaluate the AEC staff's analysis of the radiological consequences of postulated accidents since the specific meteorological conditions assumed the resulting relative concentration in sec m^{-3} and the expected frequency of occurrence of such concentrations was not listed in their discussion on page VI-4.

Department of Commerce - Letter dated August 29, 1972 (Continued)

Response

4. The description given in Section 2.8 of the Environmental Report contains sufficient information to allow an evaluation of the accidents discussed on Page VI-4 of the Draft Environmental Statement. The discussion on Pages VI-1 through VI-7 of the Draft Environmental Statement also outlines these conditions.

WPS COMMENTS TO AGENCY COMMENTS ON THE
AEC DRAFT ENVIRONMENTAL STATEMENT

Soil Conservation Service, Department of Agriculture

Comment/Conclusion

1. Section 2.3-8 - Impact of Construction Operations. Reference is made to a soil erosion control plan developed for the area controlled by the Power Company. This plan should be fully implemented as soon as possible to assure the desired erosion protection.

Response

1. Comments made by the Soil Conservation Service are directed to the Environmental Report rather than the Draft Environmental Statement. The provisions being taken for soil erosion control described in Environmental Report Section 2.3.8 are described in Draft Environmental Statement Section IV-5-C. WPS has employed adequate and effective erosion control measures since the beginning of construction with the approval of the Soil Conservation Service and the Wisconsin Department of Natural Resources.

   Documentation of local shoreline erosion has proceeded with aerial photographs being taken on a regular basis noting the high water erosion problems and the effect of the rip-rap placed directly In front of the plant and around the promontory.

Soil Conservation Service, Department of Agriculture (Continued)

Comment/Conclusion

2. Page 2.3-10 - The agricultural operations will be discontinued on 790 acres this fall. The plan is to place this land back into agriculture in the near future on a lease arrangement with local farmers. We strongly suggest that soil and water conservation be made a condition of any such leasing arrangements.

Response

2. In regard to the leasing of 790 acres of WPS property for agricultural use (Environmental Report Page 2.3-10 and Draft Environmental Statement Section V-1-A.1), if approval to do so is given by the AEC, the leasing agreements made by WPS would stipulate the practice of appropriate soil and water conservation methods as recommended by the Soil Conservation Service. Leasing agreements would exclude livestock grazing on this acreage.

WPS COMMENTS TO AGENCY COMMENTS ON THE
AEC DRAFT ENVIRONMENTAL STATEMENT

U S Coast Guard - Department of Transportation

Comment/Conclusion

It is felt that the statement should cover more adequately the movement of irradiated fuel by barge. Current AEC and DOT standards only ensure cask integrity in water up to 50 feet deep. Public safety should be protected even if the cask is involved in a transportation accident in waters which exceed that depth. Therefore, the environmental impact statement should demonstrate that either the cask is of sufficient quality that it can withstand the depth of water over which it will travel or that there would be minimal consequences to the environment if the cask is breeched or left for a duration of time in water of that depth.

Response

In response to concern over the possibility of using barges for the transportation of irradiated fuel to the reprocessor, WPS has made an initial commitment to Nuclear Fuel Services (NFS) Reprocessing Plant at West Valley, New York with the understanding that spent fuel casks would be transported by truck or rail. Shipment of irradiated fuel by barge is not being considered; however, shipment by truck is most probable at the present time. Thus, the environmental consequences of postulated barge accidents need not be considered. The final Draft Environmental Statement should include a statement to this effect.

WPS COMMENTS TO AGENCY COMMENTS ON THE
AEC DRAFT ENVIRONMENTAL STATEMENT

Department of Commerce - Letter dated September 14, 1972

Comment/Conclusion

1. Page ii, item f. The discussion here seems to deal solely with economic effects rather than environmental impacts, the avowed topic of this section. It would seem appropriate for the draft statement to discuss both the beneficial and the adverse environmental impacts of these economic effects.

Response

1. WPS feels that is is not possible to accurately assess the secondary environmental costs and benefits associated with the consumption of the power to be generated during the life of the power plant. Although it is recognized that these effects are very real and may be of great social and biological significance in some areas (e.g. new construction and manufacturing), AEC guidelines for environmental report preparations (including the August 1972 revision) do not require that any secondary power-consumption effects be addressed.

Comment/Conclusion

2. Page iv, item c. Aquatic plants should be included in the discussion of the augmented radiological monitoring program.

Department of Commerce - Letter dated September 14, 1972 (Continued)

Response

2. Aquatic plants have been collected and analyzed since the inception of the radiological monitoring program in 1969. Samples of bottom organisms including both plants and animals are taken quarterly from three locations. The sample size is about one kilogram (if available) and non-destructively scanned for gamma activity and then analyzed for gross alpha and beta activity. Slime samples are collected from six locations, if available, in sufficient quantity for analysis and scanned for gamma radiation and then analyzed for gross alpha, gross beta and strontium 89, 90.

   Plant life has also been analyzed for radioactivity content as reported in Lake Michigan Environmental Survey, Ayers, J. C., University of Michigan. Trace Element Distribution in Water Sediment Phytoplankton, Zooplankton, and Benthos of Lake Michigan - A Baseline Study with Calculations of Concentration Factors and Buildup of Radioisotopes in the Food Web, Copeland, R. A., and Ayers, J. C.

Comment/Conclusion

3. Page 2, Site Selection. Specify the degree to which alternative cooling methods were considered when alternative sites were evaluated in the mid-1960's.

Response

3. As described in the Introduction, I-1 to 3, the site selection studies conducted prior to 1967 did not include a detailed impact analysis

Department of Commerce - Letter dated September 14, 1972

related to the several possible closed cycle cooling methods as opposed to once-through cooling for each of the eleven candidate sites. The relative merits of the two general types of cooling systems were evaluated in terms of broad economic, water use, land use, and power generation considerations. A detailed analysis of the alternate cooling methods was later made and is reflected in the Environmental Report. After environmental impacts were evaluated the overall favorability of once-through cooling was substantiated.

Comment/Conclusion

4. Page 15, item e. It is stated that "Variations in year-class abundance determine the desirability of the fish populations; however, it appears that no single age group dominates the commercial harvest of most species." The term "desirability" is confusing, and suggest that it be replaced by the term "availability," if the intent of the statement is to refer to the fish populations themselves rather than the economic feasibility of fishing for certain species. With reference to the portion of the above-cited statement referring to age-group dominance, we suggest that the statement may be erroneous and that the draft statement should explore the possibility that a single year-class may support a commercial fishery for several years.

Response

4. We agree that "availability" is a better term in this context than "desirability". The market value of each commercial species in reference to age group dominance would determine to a great extent the effort expended by commercial fishermen.

Department of Commerce - Letter dated September 14, 1972 (Continued)

Comment/Conclusion

5. Page 21, item b. In our opinion the discussion of lake currents in the second paragraph would benefit by inclusion of charts or diagrams depicting the lake current situation in the vicinity of the Kewaunee and Point Beach facilities. The third paragraph, which discusses thermal stratification, should be expanded to include a description of the "Thermal bar" mentioned on page II-43.

Response

5. We agree that charts and diagrams would be helpful if they were available. Since local currents are most likely wind induced, the description of the local currents as given on Page II-21 appears to be adequate. There are studies presently being conducted on Lake Michigan which should provide data for better understanding of localized currents.

The "thermal bar" description mentioned on page II-43 is not accepted by all researchers as producing the same effects. To use it as a basis of further speculation on its effects (chemical/biological) is not proper.

Comment/Conclusion

6. Page 8, section c.3, last paragraph. It is stated that "Provision has been made to add sodium hypochlorite solution to the circulating water to prevent fouling by biological organisms, especially algae." It would be desirable for the draft statement to discuss the use of the various mechanical slime control methods and the reasons for selecting a chemical, rather than a mechanical, method for controlling slime buildup in the condenser circulating water system.

Department of Commerce - Letter dated September 14, 1972 (Continued)

Response

6. Although the circulating water system of the Kewaunee Nuclear Power Plant has a provision for the addition of sodium hypochlorite solution, WPS anticipates that the system will not have to be used during plant operation on anything like a routine shock-chlorination schedule. In fact, experience at the Point Beach station indicates that algae and slime control is not necessary at all. (Reference Environmental Report, Operating License Stage, for the Kewaunee Nuclear Power Plant, November, 1971, p. 2.3-32.) In any event, the chlorine releases will be within the EPA water quality criteria recommendations. If condenser fouling ever became a problem at Kewaunee, the use of mechanical control methods would be considered. However, due consideration would be given to any adverse effects related to the accelerated condenser corrosion rates that would result from mechanical removal of protective surface films, e.g. the amount of copper and nickel released to the lake would increase.

Comment/Conclusion

7. Page 10, first paragraph. Reference is made to a report from the Ginna Nuclear Station on Lake Ontario that refers to estimated mortality of plankton passing through the pump and condenser system. It would be helpful, for comparative purposes, if data on the Ginna plant similar to that provided for the Point Beach and Kewaunee plants on page 111-12 were presented in the final EIS.

Response

7. (page 10 should be Page 13.)
The Ginna data added to table on page 111-12 could be helpful.

Comment/Conclusion

8. Page 20, section e (2), last paragraph. It is stated that during the first six months of operation of the Point Beach Plant, a total of 20 shut downs occurred, primarily in the winter months. It is further stated that "...no fish are known to have been killed, and no other adverse effects were observed" (emphasis added). It would seem pertinent to critically examine the possibility that although mortalities have not been observed, some fish may have been so severely debilitated by low temperature shock that they sank to the bottom, perhaps under the ice, where their fate was not observed. Perhaps the final EIS could refer to results of studies that confirm or refute the hypothesis that plant shutdown in winter (or spring) produces adverse effects, such as fish mortalities, which may not be observed at that time or in that place, but which nevertheless occur.

Response

8. If numbers of fish are killed around the discharge of a plant, like Point Beach, it is likely that some of these would appear on the intake screens or due to ice free water they would be washed up on shore. This is the method of observation used. Winter is a very difficult time of year to make other types of observation as suggested. The period, manner and number of observations made is being documented in present Point Beach reporting. It is likely that few fish are occupying the shallow water area in the winter; most species move out to deeper

Department of Commerce - Letter dated September 14, 1972 (Continued)

waters. This would need to be documented. Similarly, possibility of severe "debilitation" causing fish to sink to the bottom of the lake as postulated by the Department of Commerce needs documentation.

Comment/Conclusion

9. Page 26, second paragraph. It would be helpful if the draft statement mentioned the duration of the seven fish sampling periods.

Response

9. The fish sampling dates were April 16-17, April 28-29, May 27-28, June 15-16, July 8-9, October 6-7, and October 21-22, all in 1971. We suggest these be included in the draft statement.

Comment/Conclusion

10. Page 36, last paragraph. It is stated that AEC will require the applicant to more frequently sample fish, sediments, and bottom organisms at additional locations near the effluent discharge. The final EIS should include some mention of aquatic plants in the expanded radiological monitoring program. If no plants are available, this fact should be noted.

Response

10. Fish sampling will include traveling screen monitoring for impingement. Aquatic plants (attached algae, periphyton, or "slime") are presently being sampled and monitored in the radiological monitoring program at Kewaunee.

WPS COMMENTS TO AGENCY COMMENTS ON THE
AEC DRAFT ENVIRONMENTAL STATEMENT

Federal Power Commission

Comment/Conclusion

The staff of the Bureau of Power concludes that the electric power output represented by the Kewaunee unit is needed to implement the Applicant's and MAIN's generation expansion programs for meeting projected loads and to provide a reasonable measure of reserve margin capacity for the 1973 summer peak period, particularly in view of the very large amount of other new capacity which must be in operation in MAIN's system on schedule if the forecast capacity margin is to be met.

Response

The Federal Power Commission has evaluated the need for the Kewaunee unit on the basis of an evaluation of the 1973 forecasted summer peak load-supply situation. This evaluation has been made for the Wisconsin Power Pool, made up of the three owners of the Kewaunee project and the MAIN Organization. The Kewaunee unit was scheduled for commercial operation in March, 1973 and the FPC evaluation agreed that this scheduling was necessary to meet the requirements of the Wisconsin Power Pool as well as MAIN.

Because of construction delays and design changes, it has been necessary to re-schedule the commercial operation date for the Kewaunee unit to September, 1973. Without this unit in operation, the Wisconsin Power Pool will be slightly deficient in reserve margin during July and August of 1973. However, it is anticipated that the Kewaunee unit will be undergoing opera-

Federal Power Commission (Continued)

tional testing during these months and will help to alleviate the deficiency in reserve margin.

The FPC evaluation under the heading, "Alternatives and Costs" was based upon a cost estimate for the Kewaunee unit of $137,000,000, such estimate being made in September, 1971. The current estimate of the project cost is $166,753,000. The present rating of the Kewaunee Plant is a maximum capacity of 540,000 kilowatts instead of the 527,000 kilowatt figure used in the FPC analysis.

Our current estimate of total annual costs including operating costs, and annual carrying charges on investment is 9.37 mills per kilowatt hour for a nuclear plant as compared to 9.47 mills per kilowatt hour for a coal plant. Expenditures for the Kewaunee unit through September, 1972 exceed $146,000,000.

WPS COMMENTS TO AGENCY COMMENTS ON THE
AEC DRAFT ENVIRONMENTAL STATEMENT

Environmental Protection Agency

Comment/Conclusion

1. In order to provide protection for the aquatic environment of Lake Michigan, we suggest that the applicant initiate steps appropriate to assure that the Kewaunee plant facilities and operation will be in accordance with the Lake Michigan Enforcement Conference recommendations and that no significant adverse effect of water quality or aquatic biota will occur.

Response

1. WPS believes that the operation of the Kewaunee Nuclear Power Plant as it is presently designed and constructed will cause no significant adverse effect on water quality and aquatic biota. The comment in EPA's letter of September 22, 1972, with respect to the utilization of once-through-cooling at Kewaunee is not consistent with the (Reference Report of the Environmental Protection Agency to the Lake Michigan Enforcement Conference on the Thermal Question, September 1972) which calls for a case by case evaluation of the impact of waste heat discharges. As set forth in the following response such an evaluation is being undertaken by the Wisconsin Department of Natural Resources. Operation of the once-through cooling

Environmental Protection Agency (Continued)

system has been approved by the Wisconsin Department of Natural Resources. Appropriate environmental monitoring programs have been designed and are being implemented with the approval of DNR.

Comment/Conclusion

2. Analysis of available information indicates that it may not be possible for the Kewaunee plant using the once-through cooling system to operate at full power and, at all times, comply with the thermal criteria of 1000 ft - 3°F as specified in the conference report. The final statement should indicate how compliance is to be accomplished.

Response

2. The present thermal monitoring program for the Kewaunee Nuclear Plant is based on Wisconsin Department of Natural Resources guidelines from the adopted Lake Michigan Thermal Standards (NR 102.04) which became effective February 1, 1972.

   The numerical maximum temperature criteria (NR 102.04) are identical to those recommended by the Lake Michigan Enforcement Conference; however, the implementation plan varies from Conference recommendations in the following aspects as related to the Kewaunee Nuclear Power Plant.

   (a) Mixing zones are to be established by the State following two-year studies of the environmental impact of the thermal discharge. The Kewaunee study is presently under way following approval by the State DNR. (Ref: Letter Mr. C. D. Besadny to Mr. D. R. Muller, 9/25/72.)

Environmental Protection Agency (Continued)

(b) Unless the results of this study prove damaging to the aquatic environment the Kewaunee Plant will be allowed to operate with once through cooling.

The aforementioned State guidelines are in basic agreement with the U S Environmental Protection Agency "Policy on Thermal Effluents" letter by John R. Quarles, Jr, May 12, 1972 who stated:

"It is the policy of the Environmental Protection Agency that all discharges to the aquatic environment involving waste heat be evaluated on a case-by-case basis, taking into account that some discharges must be evaluated collectively because of their related impact on a receiving water. Such evaluations should include a comprehensive analysis of all relevent factors at the site, such as water quality standards, total cumulative heat loading, current biotic impact information, scouring and other velocity effects, entrainment damage, associated chemicals, and alternative cooling and pollution abatement devices and processes.

Where the evidence indicates that once-through cooling will damage the aquatic environment, plants currently operating or under construction should be permitted to operate, but with a commitment of offstream cooling (provided that the environmental impact of the offstream cooling technique adopted is acceptable). In circumstances of substantial environmental impact, the backfitting may have to be done under an implementation schedule that requires reduced heat discharge and restricted operating levels during times of peak environmental stress. Where the discharger has demonstrated that

Environmental Protection Agency (Continued)

there is no substantial evidence of damage from once-through cooling, the plant should receive a permit to operate, but with a commitment to perform environmental monitoring and to go to offstream cooling if this monitoring produces evidence of substantial damage."

The Kewaunee Plant monitoring program is therefore following the latest recommendations of both the State Department of Natural Resources and the U S Environmental Protection Agency.

Comment/Conclusion

3. The most significant radiological consequence from normal operation of the Kewaunee Nuclear Power Plant is expected to be the potential thyroid doses from ingestion of ^{131}I via milk. The final statement should provide clarification of: (1) the criteria for use of the iodine control systems, (2) the potential ^{131}I discharges during transients which result in steam dumps to the atmosphere, and (3) the applicant's plans for returning the site property to agricultural use.

Response

3.

(1) Table 11.1-6 of Amendment 18 (5/19/72) to the FSAR revised the estimated releases accounted for by design and operational changes made to reduce Iodine discharges. This revision was not reflected in the Draft Environmental Statement which prompted the EPA comment. This table now shows that the total of 0.173 curies of I_{131} is estimated to be released to the atmosphere from the atmospheric steam dump. This value is less than the two orders of magnitude referred to by EPA in their discussion of the 52 curies of I_{131}.

Environmental Protection Agency (Continued)

The blowdown tank vent discharge has been modified to permanently discharge to the condenser.

The amount of iodine expected from the condenser air ejector as shown in the above table is negligible. There are two monitors presently installed and will be in operation in the Auxiliary Building Ventilation System; these are in addition to the monitor on the air ejector discharge. WPS plans to keep detailed records of all discharges; should plant operating experience indicate the necessity for additional iodine control, the appropriate design modifications will be undertaken.

The auxiliary building exhaust is being monitored in the same manner as described above. The spent fuel pool sweep system does permit air to be passed through charcoal filters prior to exhausting to the vent.

(2) As set forth above, Table A-1 is incorrect with respect to the estimated annual gaseous releases which were revised by Amendment 18 to the FSAR, Table 11-1-6 and dated May 19, 1972. The 52 curies I_{131} from atmospheric dumps has been revised and is presently calculated to be 0.173 curies. This value is less than the two orders of magnitude referred to by EPA.

(3) As noted in the response to the Soil Conservation Service comment on future leasing arrangements; WPS would exclude livestock grazing on any land that may be leased to the farmers.

Environmental Protection Agency (Continued)

Comment/Conclusion

4. Liquid radioactive waste management systems may be capable of treating effluents to levels that can be considered "as low as practicable." However, final determination is not possible since the turbine building sources have not been addressed in either the draft statement or the FSAR.

Response

4. Drains from the secondary systems, such as the turbine system, auxiliary steam system, moisture separator and heating steam systems are directed to the condenser. Additional drains go directly to turbine building sump as do the miscellaneous floor drains. After passing through a coke filter the sump water is discharged to the sanitary sewer. The drains are shown on Figure 10.2-8 of the FSAR.

Additional Comments (Ref. Page 16 of EPA Comments)

Comment/Conclusion

1. The shoreline of the plant site is subject to erosion, but the statement makes no mention of any efforts to control erosion. A properly monitored erosion control program should be instituted, and discussed in the final statement.

Response

1. The answer to this comment can be found in the response to the Department of Agriculture letter comment.

Environmental Protection Agency (Continued)

Comment/Conclusion

2. A discussion of (1) the types of hazardous liquids which are used at the site, (2) the control measures included for the protection of Lake Michigan from these liquids, and (3) the consequences to Lake Michigan of accidents involving these materials, should be included in the final statement.

Response

2a. The types of hazardous materials at the Kewaunee Nuclear Plant range from Sulphuric Acid and Caustic Soda used in the demineralizer regeneration to hydrazine, morpholine and phosphates used in the secondary system for steam and condensate quality control plus reagent chemicals used in both the hot and cold chemistry laboratory.

2b. The control measures initiated to protect the lake from these chemicals are as follows: There are emergency procedures for both non-radioactive chemical spills and radioactive spills that may occur. These procedures have gone through exhaustive review by plant, consultant and AEC personnel. Should any of these spills enter the drain system within the plant either the deaerated or aerated drains system would be processed through the waste evaporator and demineralizer system before entering the discharge while the deaerated drain system is subject to similar treatment including demineralizers and evaporators.

2c. Since both the deaerated and aerated drain systems are processed within the plant and monitored before entering the circulating water discharge it is not expected that hazardous liquids will directly enter the lake without treatment.

Environmental Protection Agency (Continued)

Comment/Conclusion

3. The draft statement indicates that the plant's discharge structures are subject to sedimentation. Plans for offsetting such sedimentation should be discussed in the final statement.

Response

3. The plant discharge structure in itself will not be subject to sedimentation since it is designed even with the shoreline and does not extend out into the lake. Any sediment that enters the intake and transverses the circulating water system will exit the discharge at an average velocity of 4.7 fps toward the surface. With the extreme amount of onshore turbulence around the Kewaunee site it is expected that the extensive wave action in this area will distribute and carry the sediment throughout the area.

   WPS has initiated a bottom contouring program in conjunction with its exhaustive thermal studies to document any changes in the bottom contour.

Comment/Conclusion

4. Sanitary waste treatment is stated to include aerobic digestion with settling followed by chlorination and a polishing pond. This is not a clear description. The term "aerobic digestion" probably refers to a tank aeration unit but does not eliminate the possibility of a lagoon with no sludge return. This sewage treatment facility was designed for 9,000 gallons.per day. This should be adequate for a work force of approximately 100, along with visitors to the site. The type of sanitary waste-water treatment should be clarified and assurance should be given that the plant is approved by the state.

Environmental Protection Agency (Continued)

Response

4. The sanitary waste treatment system at the Kewaunee Nuclear Power Plant has been in operation for approximately three years under the jurisdiction of state licensed personnel. The system utilizes the following steps: screening, aeration, and settling, followed by a chlorination system and a polishing pond to treat the effluent prior to discharge into the lake.

   As the sewage passes from the screening device it enters into the aeration tank. Aerobic oxidation is accomplished in an activated sludge system supplied with compressed air. The resulting mixed liquor passes from the aeration tank into a settling tank or clarifier having a four-hour retention volume based on average flow. The settled sludge is returned to the aeration tank while the clear supernatant liquid is passed over a weir into a chlorine contact chamber where an average contact time of thirty minutes is provided. Upon discharge from the chlorine contact tank, the effluent is discharged into a polishing pond (lagoon) to provide additional hold up of the treated water prior to discharge to the lake. (Reference Environmental Report, p. 2.3-61,62.)

Comment/Conclusion

5. Although the sewage treatment plant treats a very small amount of waste, the discussion should include the method of sludge disposal and the plant efficiency. Since the plant has been in operation for some time, such information should be available.

Environmental Protection Agency (Continued)

Response

5. The treated sewage will have 85 to 95% of its organic material removed before it is discharged. Sludge build up in the final retention pond has been very small during the years of treatment plant operation and to date there has been no need for sludge disposal. Should this become a problem in the future, a state approved sanitary land fill procedure would be followed.

Comment/Conclusion

6. The annual average atmospheric dilution factors as a function of direction should be given.

Response

6. Dilution factors (CHI/Q) for ground releases as a function of wind direction, and downwind distance weighted by stability class and wind rose frequencies are given in the FSAR, Section 2 and Amendment 15 as calculated by NUS Diffusion Program (Windvane).
Additional data of this nature will be available with the expanded meteorological program presently in operation at the site.

Comment/Conclusion

7. An analysis of the potential effects of accidents which will release non-radioactive volatile materials should be presented, including: (1) types and quantities of materials, (2) the probabilities of accidents, and (3) the environmental impact.

Environmental Protection Agency (Continued)

Response

7. The only volatile material that will be on site in any major quantity would be cleaning solvents and primarily acetone; however, the large quantity would only be on site during the construction phase during cleaning operations. Very limited amounts of reagent chemicals will be contained within the hot and cold chemistry labs that have ventilation hoods to work in when these chemicals are used.

When using acetone and other cleaning solvents adequate ventilation must be provided since construction personnel are required to do the cleaning and with any of the chemicals used because the quantity is very small the effect on the outside environment would be nil.

Comment/Conclusion

8. A description should be given of the numbers and kinds of emergency boilers, space heating equipment, and diesel generators, including the capacity, fuel type, fuel sulfur content, and annual use rate. (All such equipment should conform to local and state requirements for fuel use, storage, and emission controls.)

Response

8. The heating system for normal plant operation will rely on bleed steam from the secondary systems; however, once a year during refueling providing the ambient temperature requires heating, the heating boiler will be activated. This unit supplies 30,000 lb/hr of steam

Environmental Protection Agency (Continued)

at 150 psig and uses No. 2 grade Fuel Oil. A typical analysis of No. 2 Fuel Oil is as follows:

	Weight %
Sulfur	0.3
Hydrogen	12.5
Carbon	87.2
Nitrogen	0.02
Oxygen	Nil
Ash	Nil

The plant is also provided with two (2) emergency diesel generators that provide 2850 Kw for continuous operation and 3050 Kw for 30 minutes operation. The diesels will normally be set for automatic start and only operated for periodic testing and maintenance. The fuel type is No. 2 Fuel Oil with the same approximate analysis indicated previously.

Comment/Conclusion

9. It is not clear why some solid refuse is to be buried on-site, while other refuse is transported off-site for burial. This should be clarified in the final statement. (Any landfill operation employed should meet state and Federal regulations and should be state licensed.) Also, it is not clear whether the landfills mentioned on page III-33 and and page IV-1 of the draft statement are the same; this should be clarified in the final statement.

Response

9. As stated in the Draft Environmental Statement, p III-33, miscellaneous non-radioactive solid waste, trash such as paper and glass, is compressed into containers by a hydraulic bailer and stored for shipment for off-site burial by a state licensed agent. WPS currently plans to handle

Environmental Protection Agency (Continued)

in the same manner debris collected by the circulating water intake traveling screens rather than to bury this material on site. Although approximately 17 acres have been used as landfill for the disposal of construction wastes, any additional wastes of this nature will also be packaged and shipped to a licensed off site burial site.

The burial sites referred to on p III-33 and on P IV-1 are the same; however, plans for future use of this site have been changed as indicated above.

Comment/Conclusion

10. The final statement should include a discussion of noise abatement measures to be used during the remaining construction activities and plant operation.

Response

10. Noise abatement measures have been taken on the plant site to assure that construction workers and operating personnel are adequately protected. These measures include the posting of appropriate warning signs that require the use of ear protection devices during the operation of specified construction machinery (e.g. diesel generators, etc) and plant components. Protective devices such as ear plugs and ear muffs are supplied by WPS.

Recent off site noise level measurements indicate that normal highway noise levels are considerably higher at nearby residences than are plant related noises.

ADDITIONAL COMMENTS TO EPA STATEMENTS

(Referenced by Page Number)

1. Page 12 - Based on the successful operation of the air bubble screen at the Pulliam Steam Plant in Green Bay at the mouth of the Fox River. WPS has found this system to be adequate and not necessarily limited by currents, fish variety, turbidity, etc. when properly designed. Little is known about the "electric probe" system. It may work if fish are lead away from the intake. However, if shock immobilizes fish, it would make them more prone to impingement.

2. Page 13 - WPS consurs with the remarks of the EPA on the importance of considering the long term effects of pollutant discharges to Lake Michigan. At present we are faced with a lack of knowledge in the area of modelling the lake to determine long term input-output relationship of pollutants such as phosphates and sulfates. Consequently, minimal effect consideration is the approach used for control. There is a great need for comprehensive regional planning and study of these problems to assure proper use of all kinds of natural resources.

3. Page 15 - The present revised thermal impact studies as approved by the Wisconsin Department of Natural Resources will produce sufficient data to determine the long term increase of pollutants in the lake from the Kewaunee Plant. This program is measuring parameters that could be affected by plant's waste discharge including specific conductance, bacteria (total and fecal coliforms and fecal streptococci), BOD, nitrite, nitrate, ammonia, chlorine, total phosphorus, soluble orthophosphorus, total organic nitrogen, DO and turbidity. Evaluation of these data collected over a period of time would show if there was "long-term increase in pollution of lake".

This study also includes data on fish activities including spawning habits.

Argonne National Labs are presently working on fish migration studies at the Point Beach Plant, the results of which should apply to the Kewaunee Site.

WPS COMMENTS TO THE AGENCY COMMENTS ON THE
AEC DRAFT ENVIRONMENTAL STATEMENT

Department of Natural Resources - State of Wisconsin

Comment/Conclusion

This statement appears to contain a reasonable and accurate appraisal of the actual and potential effects of this facility on the environment.

We support the recommendations in the Environmental Statement that the issuance of an operating license for the facility be subject to: (a) the development of a more comprehensive biological monitoring program; (b) an increased hydrological monitoring program; and (c) an increased and augmented radiological monitoring program. Our Department has reviewed the specific environmental study proposal with members of the Wisconsin Public Service Corporation and Bio-Test Laboratories and found it to be acceptable.

Response

WPS has been cooperating with the Wisconsin Department of Natural Resources in keeping them informed of all aspects of the monitoring program and will continue to do so. The environmental study proposal referred to above is presently in effect.