AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)

CONTROL NO: 2574

FILE: ENVIRO

FROM:	DATE OF DOC	DATE REC'D	LTR	MEMO	RPT	OTHER
U. S. Dept of the Interior Washington, D. C. Rayston C. Hughes	3-22-74	3-27-74	X			

TO:	ORIG	CC	OTHER	SENT AEC PDR XXX SENT LOCAL PDR XXX
Daniel R. Muller	1 signed			

CLASS	UNCLASS	PROP INFO	INPUT	NO CYS REC'D	DOCKET NO:
	XXX			1	50-438/439

DESCRIPTION:

Ltr re our ltr 2-1-74 furn comments re the DES for Bellefonte Units 1 & 2

ENCLOSURES:

ACKNOWLEDGED
Do Not Remove

PLANT NAME: BELLEFONTE UNITS 1 & 2

FOR ACTION/INFORMATION 3-27-74 GMC

BUTLER(L)	✓SCHWENCER(L)	ZIEMANN(L)	✓REGAN(E)
W/ Copies	W/1 Copies info	W/ Copies	W/1 Copies
CLARK(L)	STOLZ(L)	DICKER(E)	
W/ Copies	W/ Copies	W/ Copies	W/ Copies
GOLLER(L)	VASSALLO(L)	KNIGHTON(E)	
W/ Copies	W/ Copies	W/ Copies	W/ Copies
KNIEL(L)	SCHEMEL(L)	YOUNGBLOOD(E)	
W/ Copies	W/ Copies	W/ Copies	W/ Copies

INTERNAL DISTRIBUTION

REG FILE (2)	TECH REVIEW	DENTON		A/T IND
✓AEC PDR (2)	HENDRIE	GRIMES	LIC ASST	BRAITMAN
OGC, ROOM P-506A	SCHROEDER	GAMMILL	DIGGS (L)	SALTZMAN
✓MUNTZING/STAFF	MACCARY	KASTNER	✓GEARIN (L)	B. HURT
CASE	KNIGHT	✓BALLARD	✓GOULBOURNE (L)	PLANS
GIAMBUSSO	PAWLICKI	SPANGLER	LEE (L)	MCDONALD
BOYD	SHAO		MAIGRET (L)	DUBE w/Input
✓MOORE (L)(BWR)	STELLO	ENVIRO	✓REED (E)	
DEYOUNG(L)(PWR)	HOUSTON	MULLER	SERVICE (L)	INFO
SKOVHOLT (L)	NOVAK	DICKER	SHEPPARD (L)	C. MILES
P. COLLINS	ROSS	KNIGHTON	SLATER (E)	B. KING
DENISE	IPPOLITO	YOUNGBLOOD	SMITH (L)	
✓REG OPR	TEDESCO	REGAN	TEETS (L)	
FILE & REGION(3)	LONG	PROJECT LDR	WADE (E)	
MORRIS	LAINAS	✓DITTMAN (2)	WILLIAMS (E)	
STEELE	✓BENAROYA	✓HARLESS	WILSON (L)	
	VOLLMER			

EXTERNAL DISTRIBUTION

LD

✓1 - LOCAL PDR SCOTTSBORO, ALA	✓(1) ~~(2)~~ NATIONAL LAB'S ANL	1-PDR-SAN/LA/NY
✓1 - DTIE(ABERNATHY)	1-ASLBP(E/W Bldg, Rm 529)	1-GERALD LELLOUCHE
1 - NSIC(BUCHANAN)	✓1-W. PENNINGTON, Rm E-201 GT	BROOKHAVEN NAT. LAB
1 - ASLB(YORE	1-CONSULTANT'S	1-AGMED(Ruth Gussman)
	NEWMARK/BLUME/AGBABIAN	RM-B-127, GT.
16 - CYS ACRS HOLDING	1-GERALD ULRIKSON...ORNL	1-RD...MULLER...F-309 GT

Regulatory File Cy.

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

In reply refer to:
(ER-74/164)

MAR 22 1974

50-438
50-439

Dear Mr. Muller:

Thank you for your letter of February 1, 1974, transmitting copies of the Atomic Energy Commission's draft environmental statement dated February, 1974 on environmental considerations for Bellefonte Nuclear Plant, Units 1 and 2, Jackson County, Alabama.

The draft statement does not adequately address our previous suggestions concerning this project which were sent to you on December 10, 1973, and to Mr. F. E. Gartrell, Tennessee Valley Authority, on June 19, 1973.

Our comments are presented according to the format of the statement or according to subject.

GENERAL

The proposed Bellefonte Nuclear Plant will be the fourth such plant to be planned, constructed and operated by TVA on the Tennessee River. Two plants, Sequoyah (TRM 484.5) and Watts Bar (TRM 526) are located above the Bellefonte site while Brown's Ferry (TRM 294) is located downstream from the Bellefonte site. We recommend the final statement be expanded to consider the cumulative environmental effects of radiological, thermal and chemical releases from all of these proposed plants.

JOHNNY HORIZON '76

2574

The draft statement appears to reflect comprehensive planning and discussion of monitoring programs to assess environmental impacts as they occur for this plant. However, there appears to be inadequate discussion or evidence of planning for design and construction to achieve minimal environmental impacts related to all types of earthwork. For example, the first and only specific mention of grading requirements appears to be near the end of the draft statement on page 9-17 where it is estimated that requirements include 800,000 cubic yards of excavation and 400,000 cubic yards of fill. This suggests that disposal of at least 400,000 cubic yards of excavated material would be required, but no discussion of this activity or any of its possible environmental impacts is presented.

THE PROPOSED PROJECT

The preliminary layout of the Bellefonte Plant shown on figure 1.1 indicates that a "yard drainage pond" would be constructed along the edge of Town Creek embayment and immediately northwest of the plant. The proposed pond is also illustrated in an artist's drawing of the proposed plant in figure 3.1 and appears to be a diked enclosure covering about 13 acres. However, the design of construction of the pond, and its perimeter dike and outlet; and the depth or amount of any excavation required to construct this facility, or of any related environmental impacts should be discussed in the final statement. The discussion of this pond on pages 3-16 is inadequate.

We suggest that additional maps be incorporated into the final statement which would clearly show both the present shoreline configuration at the site and the proposed shoreline changes for the cooling water intake system and blowdown discharged back into the Tennessee River. The structures to be built along the shoreline should be carefully identified on these maps.

GEOLOGY AND SEISMOLOGY

The brief sections on geology and seismology on pages 2-1 and 2-4 are inadequate for an independent assessment of the geologic environment relevant to the design, construction, and operation of Units 1 and 2. The physical properties of the geologic materials on which the plant would be founded are not described, nor have seismic-design parameters and the methods of their derivation been discussed. The only mention of the prescence or character of unconsolidated surficial deposits at the site is a brief reference to "residual soil overlying rock paralleling the topographic surface" in paragraph 2.6.1. The draft statement provides no indication of either the areal or the vertical distribution of any type of geologic material underlying the proposed nuclear plant. The final statement should explain these aspects of the project; and, in addition, should provide assurances that geology and seismology of the Bellefonte site have been taken into account in an appropriate manner, as prescribed in AEC's "Seismic and Geologic Siting Criteria for Nuclear Power Plants" (10 CFR 100 Appendix A, Federal Register, Vol. 36, no. 228, Nov. 25, 1971).

Under previous arrangements, the Geological Survey of this Department has reviewed the geologic conditions related to construction of the Bellefonte Nuclear Plant, as presented in the Preliminary Safety Analysis and Amendment 1. That review was transmitted to the AEC Directorate of Licensing on November 15, 1973. Nevertheless, we believe that the draft statement should provide a more comprehensive summary of the geologic and seismologic environment for the benefit of other independent reviewers.

GROUND WATER

This section contains just two lines; it does not provide data locating wells nor provide suitable identification of the ground-water regimes. The possible effect of de-watering operations is given only cursory treatment in paragraph 4.1.1. In a limestone area where ground-water is extensively used, fuller treatment of potential problems in this area is justified. The applicant's draft statement contains a limited but insufficient amount of data on ground water. A piezometric contour map of the local ground-water regime would be desirable.

GASEOUS WASTES

We suggest that the final statement should clearly indicate whether or not the effluents from this plant will meet proposed Appendix I guidelines.

SOLID WASTES

The solid radioactive wastes that result from operation of each of the two units have been estimated to include annually approximately 500 30-gallon drums of spent resins, 200 55-gallon drums of evaporator bottoms, and 600 55-gallon drums of miscellaneous dry waste. The total activity is estimated to be approximately 5,400 curies on page 3-14. It has been assumed that the wastes would be shipped to an offsite burial ground at Morehead, Kentucky. Practically no additional information is provided on the ultimate disposition of the wastes or any related environmental effects. It is suggested that the statement specify the kinds of radionuclides, their physical states, their concentrations, and the estimated total volume of wastes during the expected life of the reactors. It would also be advisable to discuss Federal and State licensing provisions, criteria, and responsibilities for the burial site in connection with: (1) its hydro-geologic suitability to isolate solid wastes of the Bellefonte Nuclear Plant from the biosphere; (2) surveillance and monitoring of the disposal site; and (3) any remedial or regulatory actions that might be necessary during the period in which the wastes will be hazardous.

STRESSON MUNICIPAL WATER AND SEWAGE SYSTEMS

We suggest that the final statement should evaluate all effects that could be caused by the untreated sewage effluent from the proposed population increase, as this is a secondary effect caused by this project.

EFFECTS OF COOLING TOWER OPERATION

It is estimated on page 5-23 that the amount of water carried into the plume "will be about 0.015 of the circulating water." In regard to previous studies of the effect of salt deposition on plants and soil, it is stated on page 5-24 that "the absolute amounts of salt under consideration in the above mentioned studies are much greater than would be deposited at Bellefonte." However, the amounts considered in these studies have not been given, and no specific estimate of the amount that would be deposited in the vicinity of the Bellefonte Plant is furnished.

It is indicated on page 8-14 that "some chemical and/or salt deposition and possibly heavy metal contamination within about 1,000 feet of the cooling towers may occur." Considering the 500-foot height and 500-foot base diameter of the cooling towers, it seems highly unlikely that the distribution of deposited salt would be limited to 1,000 feet from the cooling towers.

TRANSMISSION LINES

We suggest the use of herbicides should be restricted and support the staff recommendations.

AQUATIC ENVIRONMENT

Little information has been provided on dredging of the intake channel or related impacts. For example, although the channel would be dredged to a depth of about 30 feet, a width of 25 feet, and a length of perhaps 1,500 feet, no mention is made of the volume of dredging or blasting, the method of dredging or excavation, the type of material, or the disposal of the spoils. The fact that considerable excavation would be performed below the water line is evident on figure 5.4. An underwater trench excavated in rock is also evident on that map but this excavation and its impact are not discussed in the text. The only discussion of related impacts appears to be a brief reference to "increased turbidity and siltation, as well as alteration or loss of embayment, overbank, and channel regions from construction activities" on page 6-4. In the discussion of unavoidable environmental effects on pages 8-14 and 8-15, no mention has been made of the dredged intake channel, including alteration of the lakeshore and bottom, or the impact of spoil disposal. We recommend that the final statement consider the omissions noted above.

Further, the potential problems of siltation of the intake channel should also be discussed, including the stability of its side slopes, the form in which the slopes would be graded and protected from erosion, and any other related impacts.

If fish entrapment proves to be a problem at this plant, it may be feasible for the intakes to be extended into the main reservoir.

RADIOLOGICAL MONITORING

The program described in section 6 should be expanded to include small game within the project area.

PLANT ACCIDENTS INVOLVING RADIOACTIVE MATERIALS

Discussion of accident probabilities is purely qualitative, and discussion of the most serious, Class 9, accidents is limited largely to the statement that they are "sufficiently small in probability that the environmental risk is extremely low." We cannot agree that environmental risk can be considered low simply because probability is low, but we believe that both the probability and the severity of the accident must be considered in estimating environmental risk. Although neither of these two factors have been quantitatively estimated as yet, it is noted that "AEC is currently performing a study to assess these risks more quantitatively" and that initial results of the study are expected to be available in early 1974 (p. 7-5). We also note that similar parameters associated with the environmental effects of Class 9 accidents are not evaluated. Despite the very low probability, we believe that this information should be included in the final statement.

BIOCIDES

We suggest that the recommended EPA discharge standards for chlorine be applied to the Bellefonte plant.

UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

The final statement should assess the effects of discharging 1700 pounds of chemicals per day on the Tennessee River.

RECREATION

The statement contains an inconsistency regarding a proposed causeway across Town Creek embayment northeast of the plant. It is stated on page 4-4 that several areas of the embayment will be lost to the earthen causeway. However, it had been stated earlier on page iv that issuance of a construction permit would stipulate that "the causeway across Town Creek

embayment shall not be constructed." We suggest that access to the 400 to 500 acres of land at the end of the peninsula on which the Bellefonte Plant will be sited for recreation purposes is of particular interest. We suggest that the applicant and the staff might consider the alternative of an elevated roadway to the recreational site. Such a roadway might be less costly to construct and would cause less environmental damage than a causeway. However, we urge that public recreation should be fully encouraged at this site.

The staff decision to withhold a construction permit unless the causeway is abandoned should be reexamined. Such reexamination should be postponed until the "...safety review of the detailed recreational plan" is conducted as indicated on page 9-28. In that regard, it would be appropriate for the Department of the Interior to participate in the review of the recreation plan. If requested to do so, the Bureau of Outdoor Recreation through its Regional Office in Atlanta, Georgia, would be pleased to assist the TVA in developing its land use and/or recreation plan for the Bellefonte site.

We hope these comments will be helpful to you in the preparation of the final statement.

Sincerely yours,

Royston C. Hughes

Assistant Secretary of the Interior

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