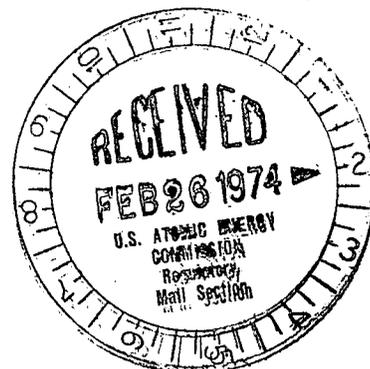




February 22, 1974



Mr. William H. Regan, Jr., Chief  
Environmental Projects Branch No. 4  
Directorate of Licensing  
U.S. Atomic Energy Commission  
Washington, D.C. 20545



Dear Mr. Regan:

In the Matter of Applications of ) Docket Nos. 50-438  
Tennessee Valley Authority ) 50-439

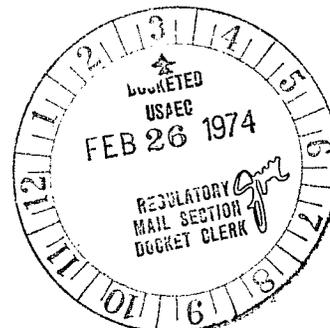
We are transmitting the additional information on the Bellefonte Nuclear Plant units 1 and 2 that you requested in your letter to James E. Watson dated January 21, 1974.

Enclosure 1 contains the information that pertains to plant construction. Enclosure 2 contains the information that pertains to transmission line construction.

Sincerely yours,

J. E. Gilleland  
Assistant to the Manager of Power

Enclosures



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FILE: ENVIRO

FROM: Tennessee Valley Authority Chattanooga, Tenn. J. E. Gilleland			DATE OF DOC 2-22-74	DATE REC'D 2-26-74	LTR X	MEMO	RPT	OTHER
TO: William H. Regan			ORIG 1 signed	CC	OTHER	SENT AEC PDR XXX SENT LOCAL PDR XXX		
CLASS	UNCLASS	PROP INFO	INPUT	NO CYS REC'D 1		DOCKET NO: 50-438/439		

DESCRIPTION:

Ltr re our ltr 1-21-74 trans the following...

**ACKNOWLEDGED**  
**DIST AS PER S. SHEPPARD**

PLANT NAME: BELLEFONTE UNITS 1 & 2

ENCLOSURES:

- Enclosure #1: Information pertinent to Plant Construction
- Enclosure #2: Information pertinent to Transmission Line Construction

**DO NOT REMOVE**

(1 cy each encl rec'd)

FOR ACTION/INFORMATION 2-26-74 GMC

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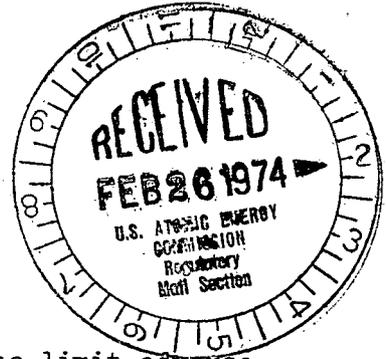
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MUNTZING/STAFF	MACCARY	✓ KASTNER	GOULBOURNE (L)	B. HURT
CASE	KNIGHT	✓ BALLARD	LEE (L)	PLANS
GIAMBUSO	PAWLICKI	SPANGLER	MAIGRET (L)	MCDONALD
BOYD	SHAO	✓ ENVIRO	✓ SERVICE (L)	DUBE w/Input
MOORE (L)(BWR)	STELLO	✓ MULLER	✓ SHEPPARD (E)	INFO
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	1-GERALD ULRIKSON...ORNL	1-RD..MULLER..F-309 GT

ENCLOSURE 1

PLANT CONSTRUCTION

Specific measures and controls that are actually used to limit adverse effects during construction of the Bellefonte facilities, including the access road and railroad, may differ from those listed herein due to changes encountered from those now anticipated. Documentation of any significant change will, however, be made, including the justification thereof.

Further amplification of the construction effects as submitted in the environmental statement under section 2.7 and other previously submitted responses are as follows:

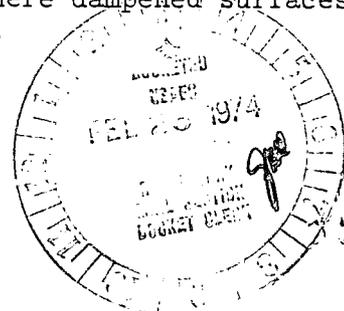
Soil Erosion and Dust Control

Standard techniques will be used to control the effects of wind and rain erosion during construction of the plant.

Specifically, the rough and final grading of the plant area and drainage ditches, including those along access roads, will limit gradient slopes to the minimum. Intercept ditches will be provided at the tops of cuts to direct water from the new cut slopes where needed. Drainage ditches will be protected from erosion by check dams, fiber mats, grouted riprap, or grass seeding, as appropriate. After cut and fill slopes are established, they will be protected by fertilizing, mulching, and seeding. Mulch will normally consist of straw secured in place with emulsified asphalt or other approved means. Grass seeds will be a mixture of fescue, vetch, and rye, or as appropriate for the season and location. Relatively level areas of the site disturbed by construction will be (a) covered with crushed stone, (b) sown with grass and mulched, or (c) paved with asphaltic or Portland cement concrete.

The use of explosives for rock excavation will be carefully planned and controlled by use of suitable blasting delays and presplitting, thereby minimizing overbreak, excessive throw, and dust. Dust from movement of construction vehicles and wind erosion will be controlled by water sprinkling and chemical treatment. Chemicals to be used for dust control include calcium chloride and water soluble polymers which will create no problem in the runoff water.

All percussion drilling will be performed with drills equipped with water or chemical dust controlling systems. Exceptions to this would be only in the limited use of "jack hammer" drills where dampened surfaces or other approved dust control measures will be used.



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Sandblasting operations will normally be performed within the paint shop area. Enclosures will be used as required to protect personnel and the environment. Protective clothing and respiratory devices will be used to protect employees performing the work.

#### Siltation and Turbidity Control

Siltation and turbidity is controlled principally by diking to contain spillages, by settlement basins to reduce suspended solids in runoff, and by seeding or sodding surfaces for erosion control.

Waste water from aggregate washing, concrete lift operation, or from hosing down of concrete trucks will have high lime content. Caution will be taken to assure that no permanent or serious temporary damage is caused by change of pH factor. These precautions would normally be sediment basins located between the wash area and stream and would include chemicals to adjust the pH factor if needed.

Turbidity from the excavation of the river portion of the essential raw water intake channel and the temporary construction dock and cooling tower blowdown discharge cannot be completely eliminated. In addition to measures previously submitted, it will be limited to the extent possible by the use of clam shell, dragline, or dipper dredge instead of a suction dredge. Onshore disposal of excavated material will be used where feasible. Efforts will also be made to limit the exposure to turbidity by scheduling the work over as short a time period as is consistent with the work to be performed.

#### Noise Control

Construction noise should have little effect on local residents. The plant site, being on a peninsula and with most of the construction activity being concentrated within the site such that it is at least one-half mile to private property, plus the groves of trees which helps suppress noise, will reduce construction noise to an acceptable level to local residents. Blasting noise during rock excavation will, of course, be heard over a rather wide area. Efforts will be made to minimize this by scheduling this work over a short time period.

#### Vegetation Protection

Minimizing destruction of vegetation is covered in general by provisions of section 2.7 of the draft environmental statement, and this will be emphasized further by prevention of clearing beyond necessary construction limits. Similarly, deposition of material in waste or spoil areas will be controlled. Pesticides and herbicides will be used only under approved conditions and surveillance.

### Disposal of Cleaning Fluids, Oils, Etc.

The release of combustion products from construction equipment and from the construction process in general is unavoidable. Since the number of vehicles, cranes, tractors, etc., with internal combustion engines will be held to a minimum, the total volume of released combustion products will not be a problem.

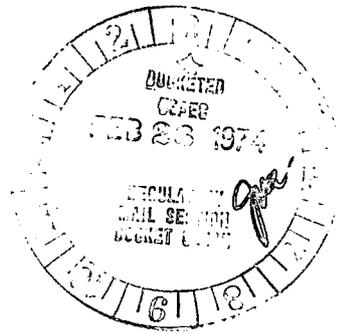
Cleaning fluids and materials, oils, and other waste will be discharged into holding ponds as further described in sections 2.5 and 2.7 of the draft environmental statement. A temporary holding pond will be constructed and used by construction until the permanent one can be installed.

### Scheduling of Construction Activities to Avoid Unnecessary Environmental Disturbance During Critical Periods

Due to the critical need for electrical energy and the relatively short construction schedule, there can be little alteration in the schedule where conflicts occur causing environmental disturbances during critical periods. Attempts will be made to minimize these disturbances by adjusting the schedules where feasible and/or scheduling the work over as short a time period as is consistent with the work to be performed.

Enclosure 2

Transmission Line Construction



In the normal process of constructing a transmission line, numerous studies and a significant amount of land description and design information must be obtained before physical construction activities can commence. The intermediate steps which progress beyond the conceptual planning stage consist of (1) preliminary route location work utilizing maps, aerial photographs, field reconnaissance, review of state and Federal listings of historical and archaeological sites and land use plans, (2) identification (i.e., from recorded deeds) of individual property owners to be affected by the projected route so that permission may be obtained for an engineering survey across their property (in many instances, court orders for entry are required), (3) the engineering survey and center line staking - this work usually involves numerous trial survey routes to accommodate where possible specific landowner requests for preferred locations on their property, (4) the preparation of plan and profile drawings from the field survey information and the identification of exact property lines relative to the proposed route, (5) the design and determination of specific transmission structure locations, working with the plan and profile drawings and supplemental information obtained from further field reconnaissance, and (6) the preparation of land appraisals and subsequent steps including offers to purchase the necessary right of way easements (at this stage of development, numerous changes often occur to again accommodate property owner desires where practical; however, major route realignments at this stage are not usually possible, and for this and many other reasons, court action is sometimes required under the right of eminent domain).

Following the above mentioned steps which usually require two or more years to accomplish, construction plans can commence.

For the transmission line connections to the proposed Bellefonte Nuclear Plant, we are now proceeding with step (3) above for the initial transmission line requirements. These facilities are scheduled to be in service by June 1976 (to be completed for other system purposes in advance of the power plant operation). This advanced line construction will involve major sections of the Bellefonte-Widows Creek 500-kV Line No. 2 and the Bellefonte-Madison 500-kV Line No. 2. The engineering survey for the Bellefonte-Widows Creek 500-kV Line No. 2 has progressed sufficiently far that a very preliminary listing of specific construction measures and controls have been projected for this line segment (the ease of access to a major part of the route which is located on public lands has facilitated the survey). These identified specifics are discussed below; however, no meaningful discussion of the remaining transmission line connections to Bellefonte can be made until the route survey progresses further.

Discussion of the  
Bellefonte-Widows Creek 500-kV Line No. 2  
(Excluding the Tennessee River Crossing at Bellefonte)

The line will exit the Widows Creek switchyard in a southeasterly direction on TVA reservation property. At this location, a crossing of the Tennessee River will be effected by occupying the vacant side of an existing set of river crossing towers. Therefore, construction activity at this crossing will be minimal. In addition, care will be exercised to protect all vegetation which exists within 100 feet of the river to prevent possible soil erosion damage to the banks and visual exposure of the structures from the river.

From the south shore dead end structure, the line will turn an angle (approximately 90°) and head southwesterly paralleling the Tennessee River for approximately 11 miles at a distance of 2,000 to 3,000 feet from the river. The land traversed by this line section is relatively flat and follows an elevation which varies from 600 to 650 feet. Normal pool elevation of Gunter'sville Lake is 595 and under some periodic flood conditions portions of the line route will be subject to high waters. Approximately 50 percent of the route is in farm or pasture use (both active and inactive). The remaining right of way area consists of various tree and brush cover which is scattered at random locations along the 11-mile route.

Approximately 10.5 miles of this line section is managed by the State of Alabama Department of Conservation and Natural Resources as a waterfowl management area. The periodic flooding of the general area enhances the waterfowl use of the area. By agreement with State Game and Fish personnel, no construction activity will be performed from November 20 through January 31 (the waterfowl hunting season). TVA will further restrict construction activities to coincide with the summer and early fall dry weather season to reduce damage which would otherwise be significant to the right of way in the winter and early spring. Special clearing methods will be used for this 11-mile section in which only select tall trees and fast growing species will be removed. The clearing operation will be closely followed by spot application of herbicides to stumps for those trees which are removed. Merchantable timber, if any, will be offered for sale through the clearing contractor where feasible. Forest slash remaining after merchantable timber is removed will be burned in compliance with Federal, state and local air quality regulations. In the vicinity of the line crossing of Alabama State Highway 117, existing vegetation along this road will be retained where practical to reduce visibility of the structures.

Along the 11-mile line section, 10 small streams will be crossed. To reduce soil erosion potential at these locations, existing low growing vegetation will be retained and bridging or culverts will

be installed to eliminate damage to all stream banks by construction vehicles. However, after construction drawings are completed which will further identify specific tower locations, a further review will be made to determine if vehicle crossings of all streams are required. This review will allow a more accurate determination of the exact access roads required for construction and future maintenance purposes.

Following construction and where appropriate, the right of way will be fertilized and seeded with a clover-fescue mixture (as requested by state wildlife management personnel). TVA will be responsible for maintaining the right of way in a permanent sod except where sacrificial row crops are planted by area farmers under a lease agreement with the State of Alabama. In advance of construction, the State will be advised of TVA schedules so that farm contracts can be worked out with cooperative farmers to prevent any crop losses.

As the line route progresses southwestward, it spans a narrow point of Coon Creek and ascends to the top of Sand Mountain. Clearing on the steep slope of the mountain will be restricted to hand cutting of tall trees and other fast growing tree species. Dogwoods and other desirable slow growing species will be retained. Regrowth will be controlled with select herbicide treatment of stumps; however, no applications will be made within 100 feet of the lake. To further minimize the removal of low growing trees, structure heights will be provided to minimize clearing requirements within practical limits (i.e., a balance between clearing requirements, cost and visual sensitivity). Burning will be used for the disposal of all trees and forest slash to prevent excessive soil damage and the destruction of low growing trees and shrubs which would otherwise occur if merchantable timber is salvaged.

After reaching the top of Sand Mountain, the line generally parallels the river southwestward to a point opposite the proposed Bellefonte Plant site. Along this route alternately open farm land, pasture and wooded farm lots are traversed. The shear clearing method will be utilized when wooded areas are crossed along this 4.6-mile line section. The potential for soil erosion through this relatively level and semiagriculture area is very slight. The longest continuous wooded area along this line section is approximately 4,800 feet. Following construction, this line section right of way will be seeded with fescue grass. Cost estimates and other related benefits for this line segment will be obtained for evaluation against the select clearing operations on the previous line section and other test tracts to be developed on the Bellefonte-Madison No. 2 Line section. These test areas in addition to other TVA research projects on right of way clearing methods will form the basis for clearing practices to be used for the transmission lines to be constructed under Steps II and III of the Bellefonte project.

Other specific construction activities will include:

1. With exception to the right of way that traverses the Sand Mountain escarpment where significant rock outcropping exists, all tower footing excavation will be performed with a tractor mounted backhoe. Each tower will require the excavation of four holes for steel grillage type foundations. These holes will be approximately 7 feet square and 6 feet deep. Earth removed from the holes will be neatly piled near the hole during placement of the grillage to avoid scattering and generally all soil will be carefully returned to the hole within 6 to 8 hours of the original excavation. Excess dirt will be firmly banked around the footing to allow for settling.
2. Although a specific material staging area and crew assembly point has not been selected, several sites in the Stevenson, Alabama, area are being investigated. The final location of the staging site will require: (1) ease of access, (2) no clearing, (3) good drainage, and (4) sufficient screening from the general public view.
3. Portable sanitary toilet facilities will be provided for construction personnel at both the material/crew staging areas and along the transmission line right of way at intervals of approximately one mile. As work progresses, these facilities will be relocated periodically as required. A service contract will be obtained for the use of these toilet facilities and the disposal of raw sewage. TVA will require that this disposal of raw sewage be handled in an environmentally acceptable manner.