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February 14, 1992

Mr. James G. Partlow  
Associate Director for Projects  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Re: Black Fox Station Units 1 and 2  
Docket Nos. STN50-556 and STN50-557  
Meeting with Staff on February 26, 1992

Dear Mr. Partlow:

This letter confirms my telephone conversation with you on February 5, 1992 requesting a meeting between the NRC Staff and representatives of Public Service Company of Oklahoma (PSO). We agreed that the meeting would occur on February 26, 1992 at 1:00 PM at NRC's offices in Rockville, MD. Representing PSO will be the following individuals:

Lee Paden	PSO, Director, Government Relations
John Zink	PSO, Director, Production Services
Robert Jackson	PSO, Manager, Economic Development
Dickson Saunders	Doerner, Stuart, Saunders, Daniel & Anderson
John Aronson	Advanced Aquatic Technology Associates, Inc., President
Kathleen Shea	Newman & Holtzinger, P.C.
Nancy Ranek	Newman & Holtzinger, P.C.

As you know, on March 7, 1983, the Atomic Safety and Licensing Board issued an order granting, without prejudice, but subject to conditions, the motion of PSO and the other owners of the Black Fox Station to terminate the licensing proceeding and withdraw their application for a Construction Permit. The Order contained two conditions as follows:

1. Subject to the NRC Staff's monitoring and approval, Applicants shall implement their Black Fox Station Soil Stabilization and Erosion Control Plan, as approved by the Staff on September 24, 1982, by no later than October 1, 1983; and

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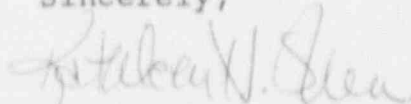
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2. Subject to the NRC Staff's monitoring and approval, Applicants shall dismantle those site improvements, not to be utilized at the Inola Station, in such a manner as not to cause any onsite or offsite detrimental environmental impacts.

At the meeting, PSO will present material concerning the status of the Inola Station site (formerly the Black Fox Station site) to demonstrate that the owners have substantially satisfied both of the Order's conditions. Enclosed for your review prior to the meeting is an information package.

If you need additional information or have questions, please feel free to call.

Sincerely,



Kathleen H. Shea

cc: Lee Paden, Esq.

**INOLA STATION  
SITE IMPROVEMENTS STATUS**

**I. BACKGROUND AND INTRODUCTION**

On March 7, 1983, the U.S. Nuclear Regulatory Commission (NRC) issued an Order granting, without prejudice, but subject to conditions, the application of Public Service Company of Oklahoma (PSO), Associated Electric Cooperative, Inc., and Western Farmers Electric Cooperative to terminate proceedings and withdraw their application for a Construction Permit for the Black Fox Station, Units 1 and 2. This Order contained two conditions as follows:

- a) Subject to the NRC Staff's monitoring and approval, Applicants shall implement their Black Fox Station Soil Stabilization and Erosion Control Plan, as approved by the Staff on September 24, 1982, by no later than October 1, 1983, and
- b) Subject to the NRC Staff's monitoring and approval, Applicants shall dismantle those site improvements, not to be utilized at the Inola Station, in such a manner as not to cause any on-site or off-site detrimental environmental impacts.

Now, in 1992, PSO has reevaluated its plans for the Inola Station site. Specifically, PSO anticipates that only about half of the 2200-acre site will be utilized for the Inola Station coal-fired generating facility. Therefore, the company is negotiating with a compatible, industrial concern for the sale and/or lease of a portion of the site which would not be occupied by the power plant. The purpose of this document is to present the information necessary for the NRC Staff to conclude that PSO has fulfilled the requirements of the NRC's March 7, 1983, Order.

II. OWNERS HAVE FULFILLED THE CONDITION TO IMPLEMENT A SOIL STABILIZATION AND EROSION CONTROL PLAN

On November 10, 1983, Dr. Germain LaRoche, a Senior Land Use Analyst on the NRC Staff, visited the site to observe the implementation of the Soil Stabilization and Erosion Control Plan dated August 30, 1982 (Attachment 1) which PSO had submitted to the NRC and which the NRC had acknowledged as adequate by letter dated September 24, 1982 (Attachment 2). The results of Dr. LaRoche's inspection were documented in an NRC internal memorandum from Ronald L. Ballard to Elinor Adensam dated February 1, 1984 (Attachment 3). According to the memorandum, the Staff concluded that "the applicant [had] performed an excellent job of establishing erosion control on the Black Fox site." Furthermore, the Staff did not foresee that "any but normal erosion sediments would be transported off-site provided that no unusual events occur to damage the described control measures."

On February 4 and 5, 1992 a detailed environmental inspection of the Inola Station site (formerly Black Fox Station site) was conducted by Mr. John G. Aronson, President of Advanced Aquatic Technology Associates, Inc. (AATA), Fort Collins, Colorado. Mr. Aronson earlier served as Project Manager for Ecology Consultants, Inc. (ECI) and Environmental Research & Technology, Inc. (ERT) on the environmental assessment activities in support of the Black Fox Station Limited Work Authorization (LWA) (1973-1978), including preparation of the Environmental Report. He was also PSO's environmental site

review consultant, conducting ecological monitoring at the site during LWA activities.

Presently, nearly all of the Inola Station site, including the area within which LWA activities related to the Black Fox Station occurred, has been leased for agricultural purposes. Cattle grazing and some cultivation of hay and row crops occurs. Mr. Aronson has concluded that the current status of erosion control at the site is excellent. The natural secondary succession anticipated in the original environmental report has occurred and erosion at the site can be considered below normal levels for this part of Oklahoma. There are a few small isolated locations where erosion can be noted. However, the perimeter drain system and holding pond that were installed are completely intact and working well. Thus, the sediment generated in the area where LWA activities occurred is being effectively controlled. Erosion from site areas not affected by LWA activities can be deemed normal for pasture lands in this part of Oklahoma. Some localized areas of overgrazing were noted, but this is consistent with normal grazing practices in the region.

Inspections of the barge slip and outfall structure adjacent to the navigation channel indicate that both are in excellent condition. There is no evidence of any significant sediment accumulation resulting from runoff at these two locations. The railroad spur was inspected and found to be in excellent condition in all areas visited, including the excavated embankments, slopes of the railway foundation, waterways, and

bridge crossings. Initial stabilization and seeding followed by the natural revegetative process has resulted in excellent sediment control.

Overall, implementation of the erosion control plan at the site continues to be effective in controlling on-site and off-site impacts that might be attributable to sediment transport. Agricultural activities currently conducted at the site appear to be normal as compared to other nearby areas, and environmental impacts from these activities are considered to fall within the normal range for such practices. Further reductions in erosion would be possible only with curtailment of grazing pressure and normal tillage practices.

III. OWNERS HAVE FULFILLED THE INTENT OF THE CONDITION THAT SITE IMPROVEMENTS NOT NEEDED FOR THE INOLA STATION BE DISMANTLED IN AN ENVIRONMENTALLY ACCEPTABLE MANNER

A. SITE IMPROVEMENTS MADE UNDER THE BLACK FOX STATION LIMITED WORK AUTHORIZATION (LWA) AND CURRENT STATUS OF EACH

On May 14, 1982, PSO and the other owners of the Black Fox Station submitted to the NRC the affidavit of John B. West, Ph.D., Black Fox Station Project Manager (Attachment 4), which listed the construction activities that had been completed under the authority of the LWA prior to the owners' Motion For Termination of Proceeding and Withdrawal of Application filed on April 6, 1982. Those activities and the present condition of each are discussed below.

1. Site Preparation

Construction areas of the site were cleared and grubbed to remove brush and trees. Grading and filling occurred, and gravel surfaces and concrete aprons, ramps and slabs were installed for the batch plant, warehouses and laydown areas.

The site contours remain as they were following grading and filling in 1978. Gravel surfaces and concrete slabs, aprons and ramps remain unaltered except for normal degradation resulting from exposure to the elements and the invasion of natural vegetation.

2. Fencing

a. Fencing was installed around the site perimeter. This fencing remains intact and in good condition.

b. A construction security fence was installed around the central station complex. This fence remains intact and in good condition.

c. A fence was installed around the cemetery south of the plant. This fence remains intact and in good condition.

d. Fencing was installed around the weld gas storage area. This small amount of fencing has been removed.

e. Since May 14, 1982, a fence was installed around the main site excavation when full-time security at the site was discontinued. The fence is chain-link, is approximately 10 feet high and remains in good condition. Signs are posted at

regular intervals to warn potential trespassers that entering the excavated area could be dangerous.

### 3. Construction Electrical Power

a. Overhead power lines from off-site power sources which were installed to provide electricity for construction purposes are still in place and in good condition.

b. Transformers installed as part of the power supply system to the warehouse and lay down areas, batch plant, reactor building excavation, and management areas have been removed from the site. The underground cables associated with the transformers are still in place. In a few locations, vandals have attempted to steal the cable (without much success) apparently for purposes of recovering the metals contained in the cable wires. Aside from these vandalized areas, the cable remains in place.

c. Temporary power distribution lines which were installed to the construction areas have been removed. The poles supporting the lines were also removed.

d. The temporary yard lighting which was installed in areas around the warehouses, the batch plant, and the field management building has all been removed.

### 4. Water Supply

a. The temporary raw water supply, which consisted of a small pond on the site, is still present. However, as indicated by Dr. West's May 1982 affidavit, the



pipng and pumps associated with the temporary raw water supply were dismantled and removed prior to withdrawal of the Construction Permit Application.

b. The construction water supply system consisted of piping into the site from the Rural Water District, a large storage tank on the site, and a small control building which housed distribution pumps and supplies. This construction water supply system met the needs for potable water, construction water, and fire water. The tank and the piping from the Rural Water District to the tank remain in place. The distribution pumps and the small control building have been removed. Except for the addition of chemicals to the storage tank for corrosion protection, no water treatment facilities were associated with the construction water supply.

##### 5. Holding Pond Area

a. A holding pond and retaining dam were constructed for controlling construction water runoff. The holding pond and retaining dam are still in good condition. Water from the holding pond discharges by gravity overflow into a drainage ditch when the holding pond water level exceeds the height of a standpipe located in the pond. Additionally, a small-diameter valved pipe through the retaining dam was designed to release water slowly from the holding pond into the drainage ditch. The water in the drainage ditch discharges to the Verdigris River through the outfall structure.

The overflow standpipe in the holding pond is in good condition, but the small diameter valved pipe may be plugged.

b. The outfall structure constructed at the Verdigris River remains in good condition.

c. An engineered drainage system was constructed from the plant area to the holding pond and from the holding pond to the outfall structure. The engineered drainage system consisted largely of drainage ditches. The ditches from the plant area to the holding pond have experienced some bank erosion but because the ditches were designed to accommodate extremely large water volumes, they continue to serve their designed purpose adequately.

d. Rip-rap and vegetation were placed to protect the holding pond dam and the engineered drainage ditch from the dam to the outfall structure. The rip-rap and vegetation at the dam are in good condition. There is no evidence of dam bank erosion. The engineered drainage system from the dam to the outfall structure is in good condition with no significant erosion.

#### 6. Railroad Spur Construction

a. A railroad corridor was cleared and graded and a track was constructed from the existing track of the MOPAC railroad to the site. This rail track remains in good condition.

b. Erosion protection in the form of rip-rap, concrete placement, and seeding, was provided along the railroad

corridor. The corridor appears to be well maintained and in good condition. Erosion protection measures have been successful.

c. A railroad spur was constructed on the site from the site boundary to the laydown and warehouse areas. This railroad spur is currently used regularly by PSO for storage of company-owned coal rail cars. The track bed has been maintained and is in good condition.

7. Roads, Parking and Drainage

a. Existing access roads to the site were upgraded and additional access roads to the site were constructed. These roads are still used by local traffic and are in good condition.

b. On-site access roads were constructed to the batch plant, warehouses, and other construction areas. The on-site roads are in good condition.

c. Three surfaced parking areas for construction personnel were constructed. The surfaced parking areas have not been disturbed. However, they have not been maintained and therefore, as would be expected, the surfaces have degraded as a result of exposure to the elements and invasion by natural vegetation.

d. An engineered drainage system was installed throughout the construction site to collect storm water run-off and channel it to the holding pond. This system consisted largely of drainage ditches leading to the holding pond which serves as a settling basin for suspended solids in storm water.

The ditches remain in good condition and continue to serve their designed function despite some bank erosion.

**8. Construction Buildings and Facilities**

a. To support construction, the equipment lay down area, one contractor's building, one field management building, one construction gate house, and two warehouses were constructed. The equipment lay down areas have not been modified. Nevertheless, as would be expected, these graveled areas have experienced degradation due to exposure to the weather and the invasion of natural vegetation. All of the buildings were kept on the site until the power plant mechanical components had been sold and removed. Subsequently, the buildings were dismantled and sold. The concrete slab foundations remain.

b. A concrete soils and testing facility, a NDE testing facility and a construction water facility were constructed. The buildings and their contents have now been removed from the site. The concrete slab foundations remain. The construction water facility is discussed above in Section III.A.4.b.

c. A sewage handling system to serve the construction work force was installed. This package treatment system has been dismantled and sold. Piping to the location of the system was not removed.

d. A fire protection water distribution system was installed. This system was supplied with water from the Rural Water District. All of the on-site piping for this system,

including the fire hydrants, remain in good condition. The water, however, has been turned off and the pumps removed. (See Item III.A.3.b above.)

e. A construction weld gas storage facility was constructed. This facility included no permanent structures and has been dismantled and removed.

f. The Mapp, oxygen, and air supply systems for construction activities were installed. The buildings, compressors, and tanks for these systems have been removed and sold. The concrete slab building foundations remain.

g. A barge slip facility was constructed to provide access for unloading materials delivered by barge. The barge slip remains at the site and the Soil Stabilization and Erosion Control Plan was implemented on the side slopes of the road leading from the barge slip to the area where LWA activities occurred. The Soil Stabilization and Erosion Control Plan was developed and implemented in consultation with the NRC as recognized in Dr. LaRoche's report (Attachment 3). As discussed in Section II above, the Soil Stabilization and Erosion Control Plan remains effective. The road surface leading from the main plant area to the slip is in good condition, not showing any signs of erosion.

Some siltation has occurred in the mouth of the barge slip due to normal currents in the Verdigris River. The U.S. Army Corps of Engineers will be consulted prior to any future dredging.

h. A concrete batch plant was erected to support construction at the site. The concrete batch plant and its supporting structures and adjacent buildings have been dismantled and removed from the site. The concrete slab foundations remain. Also remaining are the bunkers used to segregate and store raw materials.

9. Excavations

a. The excavation for the unit 1 and unit 2 reactor buildings was completed to a depth of approximately 35 feet and 45 feet, respectively, below grade. A concrete excavation seal was poured to prevent deterioration of the reactor building excavation foundation rock. The excavation has not been altered since withdrawal of the Construction Permit Application. Some erosion of the vertical sides of the excavation has occurred, but as is discussed below, no water is being removed.

b. Drains and sump pumps were installed in the reactor building excavation. The sump pumps have been removed and water which enters the excavation now simply remains there with its only outlet being evaporation. Standing water in the excavation is presently twenty to thirty feet deep and appears to have reached equilibrium with the surrounding groundwater.

c. Extensometers were installed in test wells at each unit location. The instrumentation has been removed. However, the test wells themselves remain and have not been plugged.

d. In the area of the auxiliary buildings for both units, holes were drilled for emergency core cooling system and residual heat removal system pump caissons and cylindrical steel caissons installed. These holes and the caissons remain.

e. An area for the sewage handling system waste holding tank was excavated and the tank installed. This tank remains.

f. Excavation and dredging were completed to accommodate construction of the barge slip facility. The present status of this area was discussed in Section III.A.8.g above.

#### 10. Permanent Structures

A perimeter drain system was constructed around the reactor building excavation to minimize any hydrostatic pressure on the excavation seal. The perimeter drain system remains, but the drain pumps have been removed, and as was discussed above water has collected in the excavation and appears to be in equilibrium with the groundwater.

#### B. ENVIRONMENTAL EFFECTS OF MODIFICATIONS WHICH HAVE BEEN MADE TO EACH SITE IMPROVEMENT SINCE 05/14/82

As described in Section III.A above, some site improvements (i.e., buildings (both temporary and fixed), equipment (such as compressors, pumps and transformers), and utility service (water and electric)) have been removed from the site. These improvements were judged by PSO as either not required for the future Inola Station or more economically replaceable than maintainable. Site improvements which remain are those which PSO

believes may be useful for the future Inola Station. These include the railroad spur, the fencing, the barge slip, the underground utility distribution systems, the engineered drainage system, the holding pond, and the outfall structure. The main site excavation also remains unmodified since PSO believes the appropriate time to alter it is when site preparation for the future Inola Station occurs.

The dismantling of site improvements not required for the future Inola Station was done in an orderly, environmentally acceptable manner. Buildings were removed to the base foundations which were left intact. This dismantling had little potential for environmental effects because the removal work was performed carefully so as not to reduce the salvage value of the material removed. The small amount of surface disturbance, if any, associated with equipment movements and activity did not cause any significant environmental problems, and the areas affected have been revegetated, mostly due to natural vegetational succession.

**C. POTENTIAL FOR FUTURE ON-SITE OR OFF-SITE ENVIRONMENTAL IMPACT FROM MODIFICATIONS MADE TO EACH SITE IMPROVEMENT SINCE 05/14/82**

Site improvements in their current condition are not expected to have any significant on-site or off-site impacts. As discussed above, erosion is being effectively controlled at the site. The perimeter drain system for the site is in working order, and the holding pond system is functioning well as a settling basin for suspended solids. The foundations and other



concrete structures at the site are in stable condition and pose no environmental threats. Local erosion of the excavated banks around the main site excavation is completely contained within the pond that has developed there. Taking into account the future industrial development of the site, the remaining site improvements, if left in their current state, should not cause any significant environmental harm, either on-site or off-site. There are no known underground storage tanks or hazardous chemicals located at the site.

**D. POTENTIAL FOR ON-SITE OR OFF-SITE ENVIRONMENTAL IMPACTS FROM FUTURE ACTIVITIES AT THE INOLA SITE**

**1. Current Plans for Development of the Inola Site**

**a. Inola Station**

PSO is a member of the Central and South West (CSW) System which also includes Central Power & Light Company, Southwestern Electric Power Company and West Texas Utilities Company. Twenty-year generation planning for the entire CSW System is updated annually based on the projected need for additional capacity of the individual operating companies. The 1992 CSW System Joint Facilities Plan (used in support of rate proceedings before state regulators in the jurisdictions where CSW's operating companies are located) anticipates that a coal-fired generating plant yielding approximately 660 MW will be constructed by PSO for operation beginning in 2006. The CSW System Joint Facilities Plan provides for the location of this coal plant at the Inola Station site.

No design work has yet occurred for the projected Inola Station, however, PSO continues to believe that some of the improvements at the Inola site made to support the Black Fox Station will be useful for the coal plant. For example, both the barge slip facility and the railroad spur are likely to be used for equipment deliveries during construction and coal deliveries during operation. The site perimeter fencing and on-site roads will be retained. At least portions of the fire protection water and engineered drainage systems could reasonably be utilized. A concrete batch plant to support construction of the coal plant will probably be placed in the same location as the previous batch plant, thus making use of the existing sand and rock bunkers. The storm water holding pond will also continue to perform its present function.

**b. Other Industrial Development at the Inola Site**

PSO has determined that development of a coal-fired power plant at the Inola Station site will require approximately 1,200 acres. Since the total site area is approximately 2,200 acres, the Company is negotiating with a compatible, industrial concern for the sale and/or lease of a portion of the site which would not be occupied by the power plant.

USF Yeast, Inc. has expressed interest in constructing and operating a baker's yeast production plant at the Inola Station site. The yeast plant itself would be situated on about 25 acres of the property, and additional acreage would be used for a land application wastewater system. USF Yeast has designed the yeast

plant and the associated land application system to avoid conflict with the future power plant. Also, they have applied for and obtained a permit for the land treatment system from the Oklahoma Water Resources Board. Negotiations pertaining to the lease agreement are progressing actively, but USF Yeast has expressed concern about NRC's continuing oversight of the property.

Initially, the plant would produce approximately 40 million pounds of yeast per year and employ approximately 50 people. The final product would be sold to commercial bakers for use in various baked goods.

2. Environmental Protection During Future Development

a. State Environmental Regulatory Programs

Oklahoma has entrusted protection of its environment to several departments of state government which exercise jurisdiction over the Inola Station site. The Environmental Health Services Branch of the Oklahoma Health Department has responsibility for the permitting of industrial facilities which emit pollutants into the air or which generate, transport, store or dispose solid and hazardous waste. In addition, the Health Department has authority to make investigations and inspections in order to ensure compliance with applicable solid waste legislation and to determine and enforce penalties for violations. 1/ The Oklahoma Department of Water Resources is

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1/ Oklahoma Solid Waste Management Act, Okla. Stat. Ann. tit. 63, § 1-2418 (BNA 1992).

empowered, among other things, to prohibit or abate discharges of wastes into the waters of the state. To accomplish this, representatives of the Department have the power to enter at reasonable times upon any private or public property for the purpose of inspecting and investigating conditions relating to pollution or the possible pollution of any waters of the state. 2/

In addition to the departments mentioned above, the Pollution Control Coordinating Board, through the Oklahoma Department of Pollution Control (the Board's executive arm), is empowered to: (1) compel all state agencies with environmental regulatory responsibility to investigate and carry out enforcement activities; (2) assume jurisdiction if an agency fails to act; (3) hear appeals; and (4) act on its own to abate or prevent pollution when the authority of other agencies is unclear. 3/

The state agencies discussed above have authority to ensure protection of the environment within Oklahoma regardless of the land use of a particular property. For this reason, whether the Inola Station site is developed for power plant purposes, or is put to other uses, these agencies have authority to intervene to prevent on-site or off-site environmental harm.

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2/ Oklahoma Pollution Remedies Law, Okla. Stat. Ann. tit. 82, §§ 926.3 and 926.9 (BNA 1992).

3/ Oklahoma Pollution Control Coordination Act of 1968, Okla. Stat. Ann. tit. 82, § 934 (BNA 1992).

**b. Federal Environmental Regulatory Programs**

In addition to the state environmental protection programs described above, a myriad of federal environmental laws exist which apply to the Inola Station site, whether it is developed for power plant purposes or is put to other uses. Some of these laws are administered at least in part by state departments, and others are administered by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers. Included are the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, the Endangered Species Act, the National Historic Preservation Act, and the Rivers and Harbors Act of 1899. The specific provisions of these federal laws applicable to the Inola Station site are not presented since the NRC Staff is familiar with their requirements.

**E. CONCLUSION**

PSO has dismantled those improvements which it believes are either not required for the future Inola Station or would be more economically replaced when needed than maintained until the future construction date. The dismantling was done in an orderly and environmentally acceptable manner with no residual on-site or off-site effects. The improvements which remain at the site are stable and should cause no on-site or off-site environmental harm.

The future industrial development planned for the site will be conducted pursuant to applicable local, state and federal laws and regulations which are administered by a variety of governmental agencies other than NRC. In the interim, these agencies also have adequate authority to intervene if the agricultural activities on the site create environmental concerns or if the remaining site improvements lose stability in an environmentally unacceptable manner.

Based on the above, PSO believes that it has substantially fulfilled the condition of the NRC's March 7, 1962, Order requiring PSO to dismantle those Black Fox Station improvements not to be utilized at the Inola Station in a manner not causing on-site or off-site environmental harm.

#### IV. CONCLUSIONS

In 1984, the NRC Staff determined that the owners of the Black Fox Station had successfully implemented the Soil Stabilization and Erosion Control Plan which PSO submitted to the NRC on August 30, 1982. The efforts performed under the Plan remain successful today, approximately eight years later. Additionally, some site improvements which have been judged to be unneeded for the future Inola Station have been dismantled and removed. The dismantling was done in an orderly and environmentally acceptable manner with no residual on-site or off-site effects. The remaining improvements will either be used for the Inola Station or can be most economically removed at the time of future construction. In the interim, these facilities

are stable and present no potential for on-site or off-site environmental harm. Based on this, the owners of Black Fox Station believe that they have substantially complied with all of the conditions of the NRC's Order dated March 7, 1983.

**ATTACHMENT 1**



August 30, 1982

BFS SOIL STABILIZATION AND  
EROSION CONTROL PLAN

Introduction

The Limited Work Authorization issued to the BFS Project on July 26, 1978 imposed a legal obligation to maintain the BFS site in an environmentally prudent manner consistent with the conditions of the LWA. These conditions include requirements for implementation and maintenance of soil stabilization and erosion control measures.

On May 17, 1982, representatives of the NRC Staff conducted an inspection of the BFS site. The purpose of the inspection was to review construction activities completed to date under the BFS LWA and assess the potential for adverse off-site environmental impact resulting from these construction activities. As a result of this inspection, the NRC Staff identified certain areas of the BFS site requiring additional soil stabilization and erosion control measures. The purpose of this plan is to address those areas of concern identified by the NRC Staff.

Scope

The following areas were identified by the NRC Staff as requiring additional soil stabilization and erosion control measures:

AREA I	Channels along the inclined RPV haul road;
AREA II	Slopes along both sides of the barge slip and the inclined RPV haul road;
AREA III	Eroded areas along the access road and railroad rights-of-way;
AREA IV	Area surrounding the helicopter pad;
AREA V	Engineered drainage system.

Figure 1 illustrates the location of identified areas.

Program Development

The BFS soil stabilization and erosion control plan is based on consultations with both commercial landscape contractors and representatives of the U.S. Department of Agriculture Soil Conservation Services. Following their inspection of the identified areas, these consultants provided recommendations based on their expert knowledge of local soils, climate, drainage methods and special procedures necessary to establish viable vegetative ground cover.

Based on these recommendations, a plan has been developed to address the areas of concern identified by the NRC Staff. The plan provides for construction of improved drainage channels along the inclined RPV haul road to control erosion. The plan further provides for establishing vegetative cover to stabilize the soil on identified inclined areas.

The selected method for establishing vegetative cover, where required, is a hydro-mulch application of both a quick germinating soil stabilizing grass, such as bermuda or fescue grass (depending on the season of application), and a mixture of native grasses. To facilitate the hydro-mulch application, soil samples from all areas to receive vegetative cover have been analyzed to determine the type and quantities of nutrients to be added to the soil.

#### Program

AREA I - Channels Along the RPV Haul Road: An improved drainage system will be constructed along the sides of the inclined RPV Haul Road. This will be accomplished by widening and shaping the existing channels as necessary and building concrete chutes in these channels to provide rapid drainage and prevent further soil erosion. To ensure effective drainage from the road surface to the concrete chutes and to prevent erosion of the roadbed, railroad crossties will be placed on the road bed in a baffle arrangement and secured to the roadbed to prevent displacement during runoff. This installation will provide both the channels and the roadbed with long-term stability against further erosion.

AREA II - Slopes Along Both Sides of the Barge Slip and Inclined RPV Haul Road: These areas will be provided a vegetative cover by planting a mixture of fescue and native grass seed. The seeding area will be prepared by shaping and scarifying the soil to provide a satisfactory bed for germination and growth. The seeds will be applied by a hydro-mulch process. This process distributes a stabilizing medium for the seed and soil to hold both in place until germination can occur. The process also distributes the fertilizer required during the first months of growth, and helps retain moisture during this critical period. Water will be applied to the area as required.

AREAS III and IV - Eroded Areas Along the Access Road and Railroad Rights-of-Way and the Area Surrounding the Helicopter Pad: The area surrounding the helicopter pad extends both east and west of the guard house. The areas east and west of the guard house will be seeded with grasses. The soil in the area north of the guard house consists of a mixture of shale and clay which have shown an insignificant amount of erosion since excavation, indicating the inherent stability of that soil. Therefore, no further measures to stabilize this area will be undertaken at this time. In the course of maintaining the site in an environmentally prudent manner, this area will be observed for evidence of accelerated erosion and appropriate stabilization methods will be employed as needed.

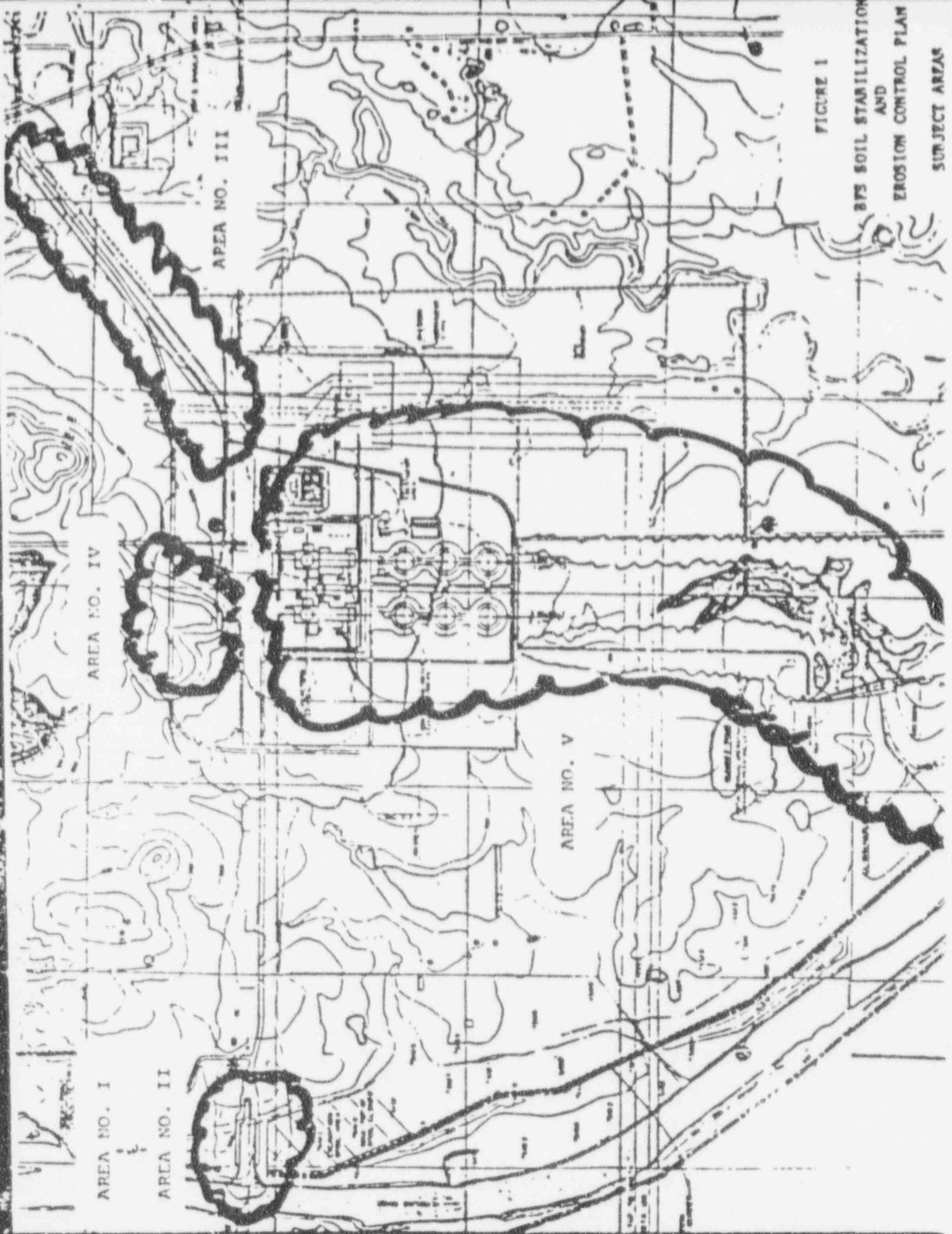
The remaining areas will be provided with a vegetative cover by planting a mixture of Bermuda grass and native grass seed. The application will be by hydro-mulch process similar to that used in Area No. II. The fertilizer application rate will be adjusted to the values indicated for each of these areas. Water will be applied to the area as required.

AREA V - Engineered Drainage System: There are no areas of the engineered drainage system experiencing significant erosion at this time. This stability is due to the protection of existing vegetation and inherent stability of the soil material. The drainage system will be maintained to serve its protective

function of minimizing the off-site impact of soil erosion. Should significant erosion develop in this area, appropriate measures will be employed to stabilize the soil.

#### Schedule

A three phased schedule for implementing the BFS soil stabilization and erosion control plan has been developed. While the plan for vegetation has been selected to provide reasonable assurance of success, there are several variables, including rainfall, temperature, and terrain, that may impact the results of the program. The phased approach will allow the benefit of using the experience gained in the first phase in later vegetative activities. Figure 2 details the implementation schedule by area.



AREA NO. I

AREA NO. II

AREA NO. IV

AREA NO. III

AREA NO. V

FIGURE 1

BFS SOIL STABILIZATION  
AND  
EROSION CONTROL PLAN  
SUBJECT AREAS

BFS SOIL STABILIZATION  
AND EROSION CONTROL PLAN

IMPLEMENTATION SCHEDULE

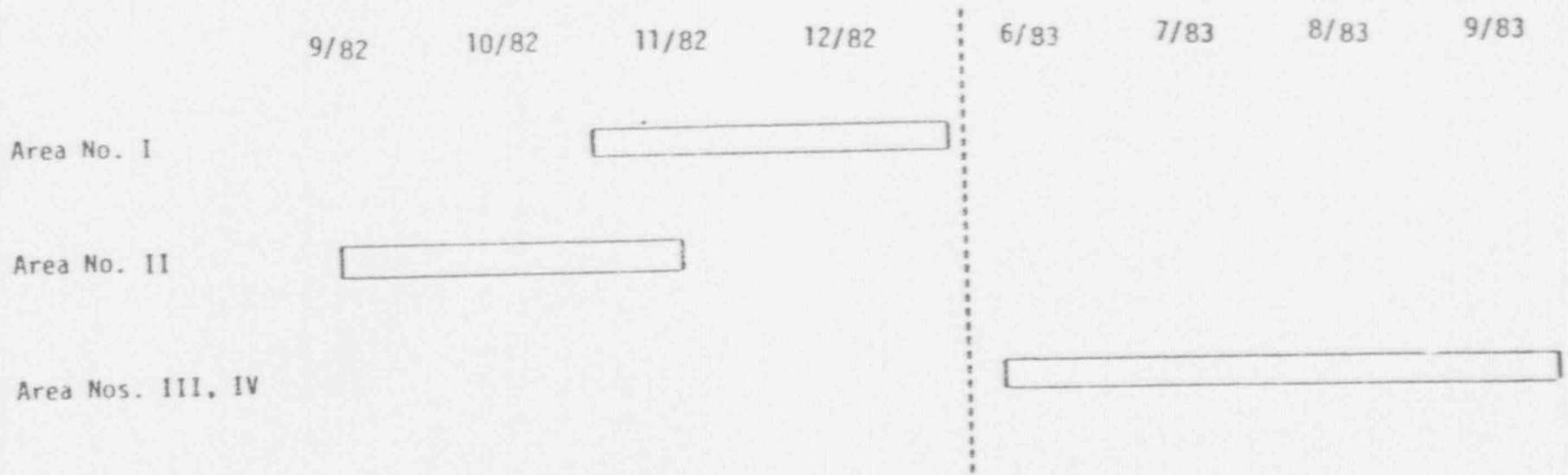


FIGURE 2

**ATTACHMENT 2**

SEP 21 1982

Docket Nos: 50-556  
and 50-557

Mr. John B. West, Manager  
Black Fox Station Nuclear Project  
Public Service Company of Oklahoma  
P.O. Box 201  
Tulsa, Oklahoma 74102

Dear Mr. West:

Subject: Black Fox Station Erosion Control Plan

The staff has reviewed the Black Fox Station Soil Stabilization and Erosion Control Plan (transmittal letter to Elinor Adensam dated September 20, 1982) that was developed in response to the June 18, 1982, Order by the ASLD. We have concluded that implementation of the plan will adequately stabilize the soil in the areas that were found to be eroding during our visit to the BFS Site in May of this year.

Sincerely,

Thomas J. Kovak, Assistant Director  
Fuel Licensing  
Division of Licensing

cc: See next page

DISTRIBUTION:

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PDR

TO	FROM	DATE	TO	FROM	DATE	TO	FROM	DATE
ADENSAM	ADENSAM	9/1/82	ADENSAM	ADENSAM	9/1/82	ADENSAM	ADENSAM	9/1/82
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**ATTACHMENT 3**



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*Attachment of file*

Docket Nos. 50-556/557

TO: Eleanor Adamsan, Chief  
Licensing Branch #4, DL

FROM: Ronald L. Ballard, Chief  
Environmental & Hydrologic Engineering Branch, DE

SUBJECT: INSPECTION OF BLACK FOX EROSION CONTROL PLAN'S EXECUTION

On November 10, 1983, Dr. Germain LaRoche inspected the results of the applicant's efforts to stabilize the Black Fox site as stated in their Erosion Control Plan submitted May 28, 1982. The results of this inspection are supplied as an attachment.

It is the Staff's conclusion that the applicant has performed an excellent job of establishing erosion control on the Black Fox site. The Staff does not foresee that any but normal erosion sediments would be transported offsite provided that no unusual events occur to damage the described control measures.

Original:

Ronald L. Ballard, Chief  
Environmental & Hydrologic  
Engineering Branch  
Division of Engineering

Attachment:  
As stated

cc: E. Davis, DEED  
T. Novak  
K. Johnston  
B. Saworth  
G. Laroche

11 FEB 1984  
11 FEB 1984  
11 FEB 1984

11 FEB 1984  
R.L. Ballard  
11 FEB 1984

## INSPECTION OF BLACK FOX EROSION CONTROL PLAN'S EXECUTION

On April 6, 1982, Public Service of Oklahoma, applicants for the Black Fox Nuclear Power Station Units 1 and 2, filed a Motion for Termination of Proceeding and Withdrawal of Application, wherein they requested that the Atomic Safety and Licensing Board enter an order terminating the instant proceeding and permitting them to withdraw, without prejudice, their application for construction permits.

On April 16, 1982, the Staff filed a response which suggested that the Board defer ruling until it received additional information from the applicants.

Board's Order of April 19, 1982 directed that applicants should file a document describing the nature and extent of site preparation activities already undertaken and of the restorative measures, if any, proposed to be undertaken. On May 14, 1982, applicants filed a response, among which it was stated "there are no current plans either to dismantle any of the facilities or to redress any of the site features". Applicants further requested that the Board grant the instant Motion, subject to the condition that applicants submit within a reasonable time after the end of 1982, a plan which addresses the need for site redress consistent with the future use determined for the site, and that said plan be subject to review and approval of the Staff. On May 28, applicants filed Dr. West's supplemental affidavit which described actions which would be taken to control erosion in the area of the inclined Reactor Pressure Vessel (RPV) haul road leading from the barge slip facility.

On April 17, 1982, Dr. Germain LaRoche, Senior Land Use Analyst in the Environmental & Hydrologic Engineering Branch, visited the Black Fox site to investigate the environmental impact thus far imposed onsite and to evaluate the potential environmental impact on and off site of abandoning construction of the nuclear power plant.

In a reply to the ASLB filed on June 2, 1982, to which was attached an affidavit of Dr. Germain LaRoche, the Staff recommended that "any conditions imposed upon withdrawal of the application should be specific, address anticipated adverse impacts from the site as it now exists, and be decided upon at termination and not left to the 'review and approval' of the Staff at some future date."

The Staff recommended that the Board grant the instant Motion, without prejudice, but subject to the following terms:

- a) The channels along the inclined RPV haul road and the slopes along both sides of the barge slip and of the inclined RPV haul road shall be stabilized to control erosion.
- b) Efforts shall be undertaken to ensure the long-term stability of the soils in the eroded portions (1) of the engineered drainage system, (2) of the area surrounding the helicopter pad, and (3) of the areas along the access roadway and railroad rights-of-way.

On November 10, 1983, Dr. Germain LaRoche returned to the Black Fox site (EFS) and inspected the results of the applicant's efforts to stabilize the site as stated above. He was accompanied by Public Service Company of Oklahoma personnel, Dr. John West, former Manager of BFS and now Manager of Fuels, Richard Mattes, present Manager of BFS, and Desmond Nistetter, Manager, Scheduling and Cost Control, BFS.

#### Present Condition of the Site and Staff Evaluation

The eroded channels along the inclined RPV haul road have been covered with concrete. The bales of hay that were on the surface of the haul road itself have been replaced with railroad ties. The slopes leading from original grade to the edge of the haul road have had topsoil added followed by hydroseeding of perennial grasses. On the steeper portion of the slope chicken wire was placed over the hydroseeded material. An irrigation system was installed and water was applied as needed during the past summer. Irrigation will continue next summer.

The perennial grasses are well established with no erosion observed. With another growing season with irrigation, a permanent grass cover, that will prevent all but normal erosion, will be established. The concreted channels cannot erode and the railroad ties will not deteriorate as the bales of hay were doing.

The engineered drainage system has stabilized and continues to drain into a settling pond. Therefore, whatever small quantities of sediment that results from normal erosion rate are not transported offsite but are deposited in the settling pond.

The area surrounding the helicopter pad was treated in the same way as the slopes of the haul road except that watering was carried out by means of a tank truck. Where the main portion of the runoff from the heliport and adjacent parking lot flows over this slope a concrete spillway was built. Grasses probably could not prevent erosion in this area but the spillway certainly will. The grasses on this slope are well established.

The areas along the access roadway and railroad rights-of-way were graded where necessary to reduce slopes and thus reduce erosion potential. A point was made that the last pass of the bulldozer on the slopes result in the tracks in the soil being horizontal and not vertical to the slope. This results in little dams rather than channels in the soil thus reducing the potential for erosion. These areas were also hydroseeded and watered as necessary. It was noted at the November site visit that these areas are now well covered with perennial grasses.

Photographs of the above areas were taken in 1982, during repair work in the spring of 1983 and on November 10, 1983. These photographs will be retained in the EHEB file on Black Fox until action on the application is completed.

In addition to the erosion control that has now been implemented, the Licensing Board Order dated January 7, 1983, specified that if a decision to build at the Black Fox site was made applicants were to advise the Licensing Board whether each facility and other improvement made at the site under the amended LWA would be utilized in the alternative project design.

On November 26, 1982, Public Service Company of Oklahoma publicly announced plans for the construction of Inola Station, a coal-fired electric power-generating station, to be built at the site of the cancelled Black Fox Station nuclear project. In the applicants' response to the Board dated January 23, 1983, applicants stated that they will dismantle any unnecessary Black Fox improvements and will return disturbed areas to conditions consistent with the present use of the site.

Because the erosion control measures recommended by the staff have been executed in an acceptable way and because the decision to construct and operate Inola Station coupled with the mechanisms for redress described in the applicants' response to the Board dated January 23, 1983, appear to provide adequate assurance and information concerning the future use and environmental control of the Black Fox site, the staff recommends that the Board grant the Motion for the Termination of Proceeding and Withdrawal of Application for Construction of the Black Fox Nuclear Station.

ATTACHMENT 4

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of the Application of )  
 )  
Public Service Company of Oklahoma, )  
Associated Electric Cooperative, ) Docket Nos. STN 50-556  
and ) STN 50-557  
Western Farmers Electric Cooperative )  
 )  
(Black Fox Station, Units 1 and 2) )

AFFIDAVIT OF JOHN B. WEST, PH.D.

I, John B. West, of lawful age and being first duly sworn, depose and say that:

1. My name is John B. West. I reside at 7901 South Yukon, Tulsa, Oklahoma. I am employed by Public Service Company of Oklahoma ("PSO") as Black Fox Station Project Manager. I have been associated with the Black Fox Station management staff since 1976. Prior to that, I was a member of the faculty of the School of Chemical Engineering, Oklahoma State University, Stillwater, Oklahoma, for over twenty-one years. I was also employed as a graduate assistant for four years at the Ames Laboratory, Iowa State University; and by the General Electric Company on the Chemical and Metallurgical Program and at the Knolls Atomic Power Laboratory for about one year each. I received B.S. and Ph.D. degrees in Chemical Engineering from Iowa State University. I am a registered Professional Engineer in the State of Oklahoma.

2. By my affidavit of May 13, 1982, I provided to the Board a delineation of the selected preliminary construction activities accomplished in accordance with the Limited Work Authorization (as amended) for Black Fox Station.

3. On May 17, 1982, the NRC Staff conducted an inspection of the Black Fox Station site to review the preliminary construction activities accomplished to date and assess the potential for any off-site environmental impact. During the inspection, the NRC Staff expressed concern regarding the potential off-site environmental impact of erosion and siltation in the area of the inclined RPV haul road leading from the barge slip facility. The erosion and siltation evident in this area are due to rain-fall runoff from the immediate vicinity of the inclined RPV haul road.

4. The central portion of the inclined RPV haul road leading from the barge slip area has been protected from degradation due to erosion by a series of staked straw-bale terraces. These terraces divert rain-fall runoff from the engineered load bearing central section of the inclined haul road to the edges of the road. The resulting erosion along the edges of haul road has produced natural drainage paths to the barge slip. Runoff in the erosion channels has removed the upper surface layer of small rock and uncovered a more stable crushed rock surface. The erosion therefore appears to have stabilized. The channels at the edges of the inclined RPV haul road will continue to be used as natural drainage paths for rain-fall runoff. However, should erosion continue along these drainage channels, corrective action will be taken.

5. The source of the siltation identified during the NRC Staff inspection is the slopes of the cut for the inclined RPV haul road. This area is less than one acre in extent. Consistent with PSO's commitment to maintain the Black Fox Station site in an environmentally prudent manner, the slopes area will be tilled, supplemented with top soil, and seeded with a mixture of soil stabilizing grasses (bermuda, rye, and weeping love grass).

Executed at Tulsa, Oklahoma

Jim B. Wood

Subscribed And Sworn To Me This 24<sup>th</sup> Day of May, 1982

Robert L. Parkey

My Commission Expires February 5, 1986