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2600 Bull Street
Columbia, SC 29201-1708

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A. B. Gould, Director
Environmental Compliance Division
The United States Department
of Energy
Savannah River Site
Post Office Box A
Building 703
Aiken, South Carolina 29802

J. V. Odum, Manager
Facility Support Section
Environmental Protection
Department
Westinghouse Savannah River
Company
Building 742A
Aiken, South Carolina 29808

Re: Savannah River Site
SC1890008989
Aiken, Allendale, and Barnwell Counties

Dear Messrs. Gould and Odum:

Enclosed is a copy of the executed Consent Order 99-21-HW for the United States Department of Energy (USDOE) and Westinghouse Savannah River Company (WSRC) in Aiken, Allendale, and Barnwell Counties in South Carolina.

The USDOE and WSRC should be aware that paragraphs 1 and 2 in the NOW THEREFORE section set the deadlines for the facility to meet the objectives of Phase I of the corrective action plan for the groundwater remediation required by the South Carolina Hazardous and Mixed Waste Permit. These deadlines are September 1, 1999 for the F-Area groundwater treatment unit and July 1, 1999 for the H-Area groundwater treatment unit.

Additionally, paragraph 3 of the aforementioned section requires the USDOE and WSRC to submit quarterly operations reports beginning on September 19, 1999 for the H-Area

only and December 19, 1999 for both the H-Area and the F-Area. These reports should be sent to the following address:

South Carolina Department of Health and
Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201
Attention: Kim K. Hagan

If any questions arise regarding this matter, please contact me at (803) 896-4152.

Sincerely,

Kim K. Hagan
Hazardous Waste Enforcement Section
Bureau of Land and Waste Management

KKH\kkh
c: John Cooper
Compliance Monitoring and Enforcement Section

Crystal Rippy
Hazardous Waste Permitting

Cynde Devlin
Division of Hydrogeology

James Burckhalter
Lower Savannah District, EQC

THIS IS A TRUE COPY OF DEPARTMENT OF HEALTH
& ENVIRONMENTAL CONTROL RECORDS
Kim R. Hagan

THE STATE OF SOUTH CAROLINA

BEFORE THE DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

IN RE: THE UNITED STATES DEPARTMENT OF ENERGY AND

WESTINGHOUSE SAVANNAH RIVER COMPANY

SC1890008989

AIKEN, ALLENDALE, AND BARNWELL COUNTIES

CONSENT ORDER

99-21-HW

The United States Department of Energy (USDOE) owns and is partially responsible for the operation of the Savannah River Site (SRS), a nuclear materials production facility located in Aiken, Allendale, and Barnwell counties in South Carolina. Westinghouse Savannah River Company (WSRC) is the cooperator of this facility. Operations at SRS include the handling and disposal of various forms of waste, including radioactive, mixed, solid, and hazardous wastes.

FINDINGS OF FACT

1. On September 5, 1995, the South Carolina Department of Health and Environmental Control issued a South Carolina Hazardous and Mixed Waste Permit to SRS for the remediation of contamination caused by the operation of units identified as the F-Area and H-Area Hazardous Waste Management Facilities. This permit required SRS to construct and operate two multi-phase groundwater remediation systems in accordance with the specifications outlined in Volumes IV and V of the 1992 RCRA Part B Permit Application. The goal of Phase I

was to minimize the amount of contaminated groundwater from further migrating and discharging to Four Mile Branch. The goal of Phase I was also to provide additional field data to be used in evaluating the effectiveness of the groundwater remediation strategy and to aid in designing additional phases, as appropriate.

2. On May 16, 1997, SRS notified the Department that the F-Area Phase I corrective action system was placed into startup operation on April 22, 1997. During the period of June 10, 1997 to December 15, 1997, SRS processed 1,234,700 gallons of contaminated groundwater. The system was designed, according to the approved corrective action plan, to operate at a flowrate of 199 gal/min in order to maintain hydraulic control and to remediate contamination hot spots. If the F-Area Hazardous Waste Management Facility had operated at maximum capacity, approximately 54,159,840 gallons of contaminated groundwater should have been processed during the June 10, 1997 to December 15, 1997 period.

3. On July 25, 1997, SRS notified the Department that the H-Area groundwater Phase I corrective action system was placed into startup operation on July 8, 1997. During the period of August 15, 1997 to December 15, 1997, SRS processed 1,113,300 gallons of contaminated groundwater. The system was designed, according to the approved corrective action plan, to operate at a flowrate of 150 gal/min in order to maintain hydraulic control and to remediate contamination hot spots. If the H-Area Hazardous Waste Management Facility had operated at maximum capacity, approximately 26,568,000 gallons of contaminated groundwater should have been processed during the August 15, 1997 to December 15, 1997 period.

4. SRS contends that it immediately encountered technical difficulties with these facilities following the injection of the initial batches due to this system being a one of a kind design and the lack of sufficient time to test the units prior to the operating permit being obtained.

5. On October 8, 1997, October 20, 1997, and November 3, 1997, SRS and the Department had conference calls to discuss problems with the operation of the F- and H- Area Hazardous Waste Management Facilities.

6. On November 24, 1997, SRS submitted a request to the Department for temporary authorization to add two new injection wells to the injection network in the H-area.

7. On December 15, 1997, SRS met with the Department to provide information to the Department about the progress of the two groundwater remediation systems.

8. On December 18, 1997, January 15, 1998, and January 27, 1998, the Department was notified by SRS of Underground Injection Control (UIC) sampling results and of corrective action planned to address the contaminants of concern.

9. On February 23, 1998, SRS submitted the F- and H- area operating histories requested by the Department on January 15, 1998.

10. On February 23, 1998, the Department issued a Warning Letter to the USDOE and WSRC. This letter set forth the Department's expectation that SRS begin to operate the F- and H-Area groundwater remediation systems at the flowrates contained in the permit no later than April 1, and May 1, 1998, respectively.

11. On March 3, 1998, SRS met with Department personnel to discuss the operation of the two groundwater treatment systems. SRS personnel indicated that the systems would not be able to comply with the April 1, and May 1, 1998 deadlines. SRS personnel requested a second meeting to propose new deadlines for the systems.

12. On March 26, 1998, SRS personnel met with the Department to propose new deadlines for the full operation of the two treatment systems. Based on these discussions with the Department, SRS personnel submitted a letter requesting an extension to the two deadlines to a single deadline for both systems of July 1, 1998. This letter included provisions for automatic extension to the July 1, 1998 deadline.

13. On March 31, 1998, SRS submitted a letter to the Department which stated that although the facility requested an extension of the April 1, and May 1, 1998 deadlines to July 1, 1998, SRS could not ensure compliance with this new deadline; therefore SRS agreed to enter into discussions with the Department concerning a consent order to ensure compliance with its South Carolina Hazardous and Mixed Waste Management Permit.

14. On April 8, 1998, construction of the groundwater treatment system major modifications began. In H-area the modifications included a filtrate return tank, two ion exchange columns, pre-filters, and an alum and polymer addition system. In F-area the modifications included a filtrate return tank, a sludge tank, one ion exchange column, pre-filters, a polymer addition system, and a sludge filter press and dryer. Approvals to operate the modified systems were received on April 30, 1998 (H-area) and June 24, 1998 (F-area).

15. On April 1, 1998, the Department sent a letter to the USDOE and WSRC extending the April 1, and May 1, deadlines to July 1, 1998 for both of the H-Area and F-Area Hazardous Waste Management Units.

16. On June 24, 1998, SRS submitted a letter requesting an extension of the July 1, 1998 deadline to August 15, 1998.

17. On June 26, 1998, the Department sent a letter to the USDOE and WSRC extending the July 1, 1998 deadline to August 15, 1998.

18. On August 12, 1998, SRS submitted a letter requesting an extension of the August 15, 1998 deadline to October 1, 1998.

19. On August 13, 1998, the Department sent a letter to the USDOE and WSRC extending the August 15, 1998 deadline to October 1, 1998.

20. On November 10, 1998, the Department issued industrial wastewater construction permits for the major modifications at the F- and H- area groundwater treatment systems.

21. On November 10, 1998, the Department approved a modification to SRS's South Carolina Hazardous and Mixed Waste Permit. This permit modification eliminated the hot spot wells and reduced the required flowrate of the F-Area system to 165 gal/min and of the H-Area system to 135 gal/min.

22. On February 11, 1999, the Department issued industrial wastewater approval to conduct tests and process modifications as a pilot study through July 11, 1999 at the F-area and H-area groundwater treatment systems. The approvals required that at the conclusion of the pilot studies, permit application modifications must be submitted so that the construction permits may be modified.

23. On February 24, 1999, the Department issued modified underground injection control operating permits for the F- and H-area groundwater treatment systems.

CONCLUSIONS OF LAW

The South Carolina Hazardous Waste Management Act, S.C. Code Ann. §44-56-40 (Supp. 1998), authorizes the Department to enter into agreements, contract, or cooperative arrangements, under such terms and conditions as it deems appropriate, with other state, Federal or interstate agencies, municipalities, educational institutions, local health departments, or other organizations or individuals.

NOW THEREFORE IT IS ORDERED with the consent of SRS that pursuant to S.C. Code Ann. §§ 44-56-40, 44-56-30, 44-56-130, and 44-56-140 (Supp. 1998):

1. No later than September 1, 1999, SRS shall meet the objectives of Phase I of the corrective action plan to remediate the groundwater contamination plume as required in the South Carolina Hazardous and Mixed Waste Permit and any approved modifications to that permit for the F-Area groundwater treatment unit.

2. No later than July 1, 1999, SRS shall meet the objectives of Phase I of the corrective action plan to remediate the groundwater contamination plume as required in the South Carolina Hazardous and Mixed Waste Permit and any approved modifications to that permit for the H-Area groundwater treatment unit.

3. No later than the 19th of the month following the end of each quarter beginning July 1, 1999 for H-area and September 1, 1999 for F-area, SRS shall submit to the Department an operations report for the previous quarter's operations. This report shall include, but is not limited to the following information for both the F-area and the H-area Hazardous Waste Management Facilities, separated by area: the identification of the reporting quarter, the flowrate achieved for each day during that quarter, the downtimes in hours experienced for each day,

an explanation of the downtimes experienced, the total hours of operation, and a detailed explanation including amount of time for any downtime that is not included on Attachment I and for which an extension has not been granted by the Department.

IT IS FURTHER ORDERED AND AGREED that if determined by the Department, USDOE and WSRC shall pay an one thousand dollar ($1000.00) stipulated penalty per violation for each day that the F- and/or the H-Area Hazardous Waste Management Facilities do not operate at the flowrates specified in the permit and any modifications to the permit that have been approved by the Department. Stipulated penalties will not be assessed for downtimes experienced in accordance with Attachment I, for downtimes that are less than four (4) hours in a calendar day, or for downtimes in exception to Attachment I that have been granted by the Department. Downtimes experienced in accordance with Attachment I are limited as follows:

1. For H-Area Hazardous Waste Management Facility: downtimes are limited to less than 15%(14 days) total for each quarter and any five consecutive days.

2. For F-Area Hazardous Waste Management Facility:

   a. For September 1, 1999 to no later than August 31, 2000: downtimes are limited to less than 25%(23 days) total for each quarter and any five consecutive days.

   b. For no later than September 1, 2000 and until this Order is terminated by the Department: downtimes are limited to less than 15%(14 days) total for each quarter and any five consecutive days.

Exceptions to Attachment I will be granted by the Department on a case-by-case basis. The determination of any stipulated penalties will be made on a quarterly basis. Stipulated penalties under this paragraph shall be made payable to the S.C. Department of Health and Environmental Control.

The stipulated penalty set forth above shall be in addition to any other nonmonetary remedies or sanctions which may be available to the Department by reason of SRS's failure to comply with the requirements of this Order.

The requirements of this Consent Order shall be vacated under the following conditions:

1. SRS is operating and maintaining the F- and H- Area Hazardous Waste Management Facilities in compliance with the requirements of the Hazardous and Mixed Waste Permit and the requirements of this Order; and

2. SRS has not been assessed any stipulated penalties by the Department as set forth above for twelve (12) consecutive months, with start dates of July 1, 1999 for the H-Area Hazardous Waste Management Facility and no later than September 1, 2000 for the F-Area Hazardous Waste Management Facility; or

3. If sections IIID.H.13.a or IIIC.H.13.a of the permit are invoked; or

4. As otherwise agreed to by the Department in writing as an amendment to this Consent Order.

IT IS FURTHER AGREED that any determination by SRS or the Department on the effectiveness of the F- and/or H-Area Hazardous Waste Management Facilities is independent of the payment or non-payment of

stipulated penalties required by this Order. If the Department determines that the F- and/or H-area corrective action systems are not effectively addressing the groundwater contaminant plumes, this Order may be reopened and/or extended, or an Administrative Order may be issued by the Department.

IT IS FURTHER AGREED if any *force majeure* event occurs which causes or may cause a delay in meeting any of the scheduled activities of this Order, SRS must notify the Department in writing at least one (1) week before the scheduled date, if known, describing in detail the anticipated length of the delay, the precise cause or causes of the delay, if ascertainable, the measures taken or to be taken to prevent or minimize the delay, and the timetable by which those measures will be implemented.

The Department shall provide written notice as soon as practicable that a specified extension of time has been granted or that no extension has been granted. An extension shall be granted for any scheduled activity delayed by an event of *force majeure* which shall mean any event arising from causes beyond the control of SRS that causes a delay in or prevents the performance of any of the conditions under this Consent Order including, but not limited to: a) acts of God, fire, war, insurrection, civil disturbance, explosion; b) adverse weather conditions that could not be reasonably anticipated causing an unusual delay in transportation and/or field work activities; c) restraint by court order or order of public authority; d) inability to obtain, after exercise of reasonable diligence and timely submittal of all applicable applications, any necessary authorizations, approvals, permits, or licenses due to action or inaction of any governmental agency or authority; and e) delays caused by compliance with applicable statutes or regulations governing contracting, procurement, or acquisition procedures, despite the exercise of reasonable diligence by SRS.

Events which are not *force majeure* include by example, but are not limited to, unanticipated or increased costs of performance, changed economic circumstances, normal precipitation events, or any person's failure to

exercise due diligence in obtaining governmental permits or fulfilling contractual duties. Such determination will be made at the sole discretion of the Department. SRS may appeal such determinations in accordance with all applicable laws. Any extension shall be incorporated by reference as an enforceable part of this Consent Order.

IT IS FURTHER AGREED that no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. Section 1341.

IT IS FURTHER AGREED that failure to meet deadlines established herein or any other violation of the provisions of this Order shall be deemed a violation of the South Carolina Hazardous Waste Management Act and therefore shall be deemed unlawful. Upon ascertaining any such violation, the Department shall initiate action to obtain compliance with this Order and the aforesaid Act.

THE SOUTH CAROLINA DEPARTMENT OF
HEALTH AND ENVIRONMENTAL CONTROL

DATE: 6/30/99 BY: Douglas E. Bryant
Douglas E. Bryant
Commissioner

We Consent:

THE UNITED STATES DEPARTMENT OF ENERGY

Thomas H Heenan DATE: 6/23/99

_____ DATE: _____