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# Texas Department of Health

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April 9, 1999

UNITED STATES NUCLEAR REGULATORY COMMISSION  
ATTN PAUL H LOHAUS DIRECTOR  
OFFICE OF STATE PROGRAMS  
MAIL STOP O3H20  
WASHINGTON D C 20555

Dear Mr. Lohaus:

Please find attached the additional information requested by your office, in a letter dated March 29, 1999, regarding our request for concurrence on termination of Radioactive Material License No. L02537. Please refer to section II of the enclosure for information regarding well plugging.

As maintaining this site places an undue economic burden and hardship on the licensee we request expeditious processing of this request.

If you have any questions, please call me at (512) 834-6688 extension 2208.

Sincerely,

Eugene (Gene) Forrer  
Chief, Uranium Licensing Project  
Division of Licensing,  
Registration, and Standards  
Bureau of Radiation Control

Enclosure

# Texas Natural Resource Conservation Commission

INTEROFFICE MEMORANDUM

To: Dale P. Kohler, Team Leader                      Date: March 21, 1996  
UIC, Uranium, and Radioactive Waste  
Section

From: Vic Whadford, Licensing Team  
UIC, Uranium, and Radioactive Waste Section

Subject: RW2537 Westinghouse Bruni - A Request for Termination

## EXECUTIVE SUMMARY:

*Item 1*

### Introduction:

In a letter dated December 14, 1993 signed by David A. Loera, Manager of the Bruni Mine Site, Westinghouse Electric Corporation (WEC) requested termination of WEC's Radioactive Material License. The current license is Texas Natural Resource Conservation Commission (TNRCC) License Number RW2537, Amendment Number 1, issued on July 14, 1995. Attached to the letter was the "BRUNI MINE SITE, CLOSING REPORT, RML NO. LO-2537," Parts 1.0 through 6.0 with Table 1, "Bruni Site - Byproduct Storage Sites" and also an Appendix, "Maps of the Bruni Sites," Maps A, B, C, D, E, F, and G.

This Radioactive Materials license was originally issued in the 1970's by the Texas Department of Health (TDH) for in situ uranium mining and uranium recovery and processing. Following cessation of mining and processing, the license was amended to authorize recovery of natural uranium (U-nat) incidental to decommissioning, restoration, decontamination, and reclamation of the site and the transfer of U-nat to authorized recipients. The licensee was authorized to store byproduct material prior to its transfer to authorized disposal facilities, and to dispose of byproduct fluids in a deep disposal well permitted by the Texas Water Commission (TWC). The TWC also issued an situ uranium mining permit (with production area authorizations or PAAs) to WEC.

This technical review was done in response to the termination request by WEC. The review evaluates past licensee (or permittee) actions and the regulatory agency confirmatory close out surveys/releases to determine if further documentation, sampling, or remediation will be necessary prior to termination. License termination regulations can be found in 30 TAC Chapter 336 as adopted by TNRCC effective December 29, 1993. In addition, the licensee is required to meet close out requirements found in various License Conditions of RW2537.

### General:

The Bruni mine site is located about 8 miles north of Bruni, Texas, and about 2 miles west of FM 2050 in Webb County, Texas. The permit area under lease was 1,480 acres with only about 100 acres impacted by production facilities, well fields, and roads (see Attachments A, B, and C).

Uranium production at Bruni began in late 1975 and continued until 1981, when full-scale well field restoration began. The production zone was the Catahoula Formation in the subsurface interval of 130 to 190 feet. Uranium was mobilized by use of an ammonium bicarbonate lixiviant fortified with an oxidant. The deep disposal well (WDW-170) was used to inject liquid wastes into the Yegua Formation in the approximate subsurface interval between 2,900 and 3,950 feet.

On March 1, 1992, the jurisdiction for disposal of radioactive materials (including byproduct material) was transferred from TDH to TWC. On September 1, 1993, the TWC and the Texas Air Control Board (TACB) merged to form the TNRCC. On September 1, 1993, authority to regulate source material (uranium) recovery and processing was transferred from TDH to TNRCC. The transfer of regulatory authority for uranium recovery resulted in TNRCC re-issuing WEC Bruni license on August 1, 1994 (License No. RW2537, Amendment No. 0).

WEC had posted financial assurance in the amount of \$6,130,528.00 in the form of a performance bond dated July 30, 1987, made in the name of TDH. The company elected not to reduce the amount of assurance with progress in reclamation and closure. WEC (Bruni) is currently negotiating with the TNRCC staff regarding an appropriate amount and form of assurance, based on the consideration that its license termination request is pending with the agency. WEC has paid all applicable annual license fees.

#### Summation:

In the termination Closing Report dated December 14, 1993 and TNRCC WEC files (located in TNRCC Central Records), WEC has submitted substantial documentation towards demonstrating compliance with TNRCC regulations and license conditions for termination of License RW2537. However, the attached staff review of WEC efforts and TNRCC file records has determined that there are several items that need further action.

As noted in SECTION VII, Recommendations: of the attached report (#s 1 through 8), some additional information/action will be required of WEC such as: landfill trash records, radiation surveys of five of the six remaining buildings/structures (according to the Closing Report these five surveys are in WEC files), radiation grid surveys of the surface of the plant area and byproduct storage areas, a report on WEC Bruni septic systems (including sampling results), a report on the status of potable water supplies (wells) used on site, a copy of the contract for disposal of byproduct material with Conoco Conquista, and a summation of byproduct disposal shipments to Conoco Conquista and American Nuclear Corporation. In addition, soil washing eluant must be accounted for.

The TNRCC should conduct a final site visit to verify and catalog all remaining structures left on site (such as buildings or concrete pads). At that time, confirmatory close out radiation surveys (using appropriate meters and probes) and sampling can be conducted on structures or areas that are not sufficiently documented. This would include three of the six remaining buildings, two concrete pads, certain plant surface areas, a possible well field "hot spot", and a well field area (center of PAA#4 or WEC Cell E). Appropriate confirmatory sampling (wipes, soils, sediments, or water) should be obtained on the three buildings in question, the two concrete pads, the former plant pad area, any remaining septic tanks, and remaining potable water systems. The TNRCC field survey team may need to obtain additional samples based data/readings obtained and agency procedures. See SECTION VII, Recommendations:, (#s 9 through 18) of the attached report for details. After review of additional WEC submissions and sampling data, the TNRCC should conduct a final record review of WEC Bruni files located in Round Rock, Texas.

**WESTINGHOUSE BRUNI  
LICENSE NO. RW2537**

**A REQUEST FOR TERMINATION**

**SECTION I**

**Introduction:**

In a letter dated December 14, 1993 signed by David A. Loera, Manager of the Bruni Mine Site, Westinghouse Electric Corporation (WEC) requested termination of WEC's Radioactive Material License. The current license is Texas Natural Resource Conservation Commission (TNRCC) License Number RW2537, Amendment Number 1, issued on July 14, 1995. Attached to the letter was the "BRUNI MINE SITE, CLOSING REPORT, RML NO. LO-2537," Parts 1.0 through 6.0 with Table 1, "Bruni Site - Byproduct Storage Sites" and also an Appendix, "Maps of the Bruni Sites," Maps A, B, C, D, E, F, and G.

This Radioactive Materials License was originally issued in the 1970's by the Texas Department of Health (TDH) for in situ mining and uranium recovery and processing. Following cessation of mining and processing, the license was amended to authorize the recovery of natural uranium (U-nat) incidental to decommissioning, restoration, decontamination, and reclamation of the site and the transfer of U-nat to authorized recipients. The licensee was authorized to store byproduct material prior to its transfer to authorized disposal facilities, and to dispose of byproduct fluids in a deep disposal well permitted by the Texas Water Commission (TWC). The TWC also issued an in situ uranium mining permit (with production area authorizations or PAAs) to WEC.

This technical review was done in response to the termination request by WEC. The review evaluates past licensee (or permittee) actions and regulatory agency confirmatory close out surveys/releases to determine if further documentation, sampling, or remediation will be necessary prior to termination. License termination regulations can be found in 30 TAC Chapter 336 as adopted by TNRCC effective December 29, 1993. Of particular interest are referenced regulations found in the Texas Regulations for Control of Radiation (TRCR) Part 21, and TRCR 43.32. Surface areas, buildings, and materials to be released for unrestricted use cannot exceed radiological limits found in 30 TAC §336.6(f) and/or 30 TAC §336.1, TRCR Part 21, Appendix 21-G. In addition, the licensee is required to meet close out requirements found in various License Conditions (such as 8, 21, and 29 through 33) of RW2537.

**General:**

The Bruni mine site is located about 8 miles north of Bruni, Texas, and about 2 miles west of FM 2050 in Webb County, Texas. The permit area under lease was 1,480 acres with only about 100 acres impacted by production facilities, well fields, and roads (see maps, Attachments A, B, and C). The company has operated under the names of Wyoming Mineral Corporation (WMC) and Westinghouse Electric Corporation.

Uranium production at Bruni began in late 1975 and continued until 1981, when full-scale well field restoration began. The production zone was the Catahoula Formation in the subsurface interval of 130 to 190 feet. Uranium was mobilized by use of an ammonium bicarbonate lixiviant fortified with an oxidant. The deep disposal well (WDW-170) was used to inject liquid wastes into the Yegua Formation in the approximate subsurface interval between 2,900 and 3,950 feet.

In October 1972 the Texas Department of Health (TDH) issued License No. 0-1747 to Wyoming Mineral Corporation to conduct a pilot in situ operation at Bruni (pilot activities began in 1973). In December 1974 this license was amended as a joint license to authorize in situ mining at the company's Lamprecht (Live Oak County) site and in situ mining and processing on a commercial scale at the Bruni site. In September 1976 TDH redesignated the license as 10-1747, and authorized uranium mining activities through October 1979.

In June 1978 TDH issued a separate license for the Bruni site (No. 10-2537) with an expiration date of June 1981. In March 1979 the license number was changed to 8-2537. In May 1981 the company applied for a license renewal and submitted an environmental report. Since the renewal was filed in accordance with TRCR 43.33(b), the license was valid until renewed in 1990.

In January 1984 the name of the licensee changed to Westinghouse Electric Corporation, the parent company of WMC. In March 1988 the license number was changed to L02537, sub-site 000. In January 1990 the license was renewed with an expiration date of June 1995. WEC filed for termination by letter of December 14, 1993 in compliance with TRCR 43.32(c)(2) requirements that such application be done at least 90 days before the expiration date specified in the specific license (June 1995).

On March 1, 1992, jurisdiction for the disposal of radioactive materials (including byproduct material) was transferred from TDH to TWC. On September 1, 1993, the TWC and the Texas Air Control Board (TACB) merged to form the TNRCC. On September 1, 1993, authority to regulate source material (uranium) recovery and processing was transferred from TDH to TNRCC. The transfer of regulatory authority for uranium recovery resulted in TNRCC re-issuing the WEC Bruni license on August 1, 1994 as License No. RW2537, Amendment No. 0.

WEC had posted financial assurance in the amount of \$6,130,528.00 in the form of a performance bond dated July 30, 1987, made in the name of TDH. The company elected not to reduce the amount of assurance with progress in reclamation and closure. WEC (Bruni) is currently negotiating with the TNRCC staff regarding an appropriate amount and form of assurance, based on the consideration that its license termination request is pending with the Commission. WEC has paid all applicable annual license fees.

## SECTION II

Licensee actions concerning TWC Underground Injection Control (UIC) Class I and Class III permits, solid waste registrations, and Texas Air Control Board are:

1. WEC held a deep disposal well TWC Permit No. WDW-170. By letter of May 7, 1993 TWC authorized WEC to plug and abandon (P&A) this well. A TWC memo dated June 28, 1993 states that TWC staff inspected the well plugging and reported that decommissioning was completed on June 17, 1993. However, a photograph taken during a TNRCC inspection on April 21, 1994 shows a plaque which states that WDW-170 was plugged on June 18, 1993. Permit No. WDW-170 expired on October 8, 1995.
  
2. The licensee was authorized to mine uranium by the in situ leach method under TWC Permit Number UR01942. TWC designation of mining areas are as follows:

Area Permit #	Production Area Auth.	# acres	Remarks
UR01942-011	PAA#1		
UR01942-021	PAA#2		
UR01942-031	PAA#3	6.9	consolidation of PAA# 3, 4, & 6
UR01942-041	PAA#4	9.5	
UR01942-051	PAA#5	16.8	consolidation of PAA# 1 & 2
UR01942-061	PAA#6	14.9	

3. After satisfactory restoration of the mined aquifer waters, and upon WEC's application, TWC released production zones for P&A (as well as certain other wells) by the following letters:

Production Area #5, Part 1 - July 24, 1987 from the TWC Executive Director

Production Area #5, Part 2 - was acknowledged restored on November 15, 1988.

Production Area #3 - November 13, 1990 from the TWC Executive Director

Five excursion wells - (PA#s 3, 4, & 5) April 17, 1991 from the TWC Director of Water Rights and Uses

14 shallow monitor wells - April 17, 1991 from the TWC Director of Water Rights and Uses

Discussion (items 1, 2 & 3 above): TWC authorized P&A of the deep disposal well (WDW-170). A TWC memo dated June 28, 1993 documents that the TWC inspector observed plugging operations and that, "The WDW-170 plugging plan was followed and accepted methods and procedures were used." Permit WDW-170 expired on October 8, 1995.

*Item 2*

PA#5, Part 1 was acknowledged as restored by the TWC Executive Director by letter of July 24, 1987. WEC correspondence to the Executive Director dated November 4, 1987 states that 329 wells in PA#5, Part 1 were "recently plugged" and that plugging procedures were witnessed by a TWC inspector on October 9, 1987. The inspector's report/memo was not located; however, subsequent TWC documentation of later inspections of well fields (such as January 14, 1991) makes the general statement that, "The inspection found the project to be generally in compliance with the respective permits."

A TWC memo dated November 13, 1989 states that PA#5, Part 2 was acknowledged as restored by the TWC on November 15, 1988; however, the acknowledging letter was not located. A WEC letter of December 5, 1988 states that plugging of Well Field PA#5, Part 2 would begin on December 5, 1988 and that it would include the shallow zone wells, including shallow zone wells (with certain exceptions) involved with Pond #5. A TWC memo dated December 16, 1988 states that the closure procedures were witnessed by a TWC inspector and that the "contractor appeared to be following accepted cementing practices and no problems had been encountered."

A TWC memo dated January 11, 1991 documents on-site inspection of consolidated PA#3 during plugging activities. A TWC letter dated January 14, 1991 to WEC found that the PA#3 P&A project was, "generally in compliance with the respective permits."

TWC correspondence with WEC (cited above) indicates that the deep disposal well, well fields, and various monitor and excursion wells were restored in accordance with permits, and that plugging and abandonment occurred in an acceptable manner. By letter of July 22, 1993 WEC requested termination (consent to revocation) of the base permit URO1942, which includes all production areas. Commission action is pending.

Item 3

4. TNRCC License RW2537 License Condition 29(B) requires the licensee to register on-site solid waste pits with the TWC, Waste Management registration. Six landfill pits (1-6) were registered by TWC notice dated January 31, 1990. Burial of byproduct material was not authorized in these pits.

Discussion: WEC complied with License Condition 29(B) by registering the on-site landfills.

5. On July 14, 1978 WMC was issued Texas Air Control Board "Construction Permit - Uranium Solution Mining Restoration Plant Facilities #3" Permit No. C-6518. Special provisions dealt with limits on total emissions of ammonia and ammonia chloride. By a TNRCC letter dated April 12, 1995 to WEC, Permit No. 6518 was voided.

*Additional information is provided in the following letter. Kevin Hank 11/8/99*