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U.S. Department of Energy
Contract No. DE-CE01-09RW09021

*Contract for Disposal of Spent Nuclear Fuel and/or High-level
Radioactive Waste*

THIS CONTRACT, entered into this 12th day of January 2009, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), represented by the UNITED STATES DEPARTMENT OF ENERGY (hereafter referred to as "DOE") and Union Electric Company d/b/a AmerenUE, (hereinafter referred to as the "Purchaser"), a corporation organized and existing under the laws of the State of Missouri (add as applicable: "acting on behalf of itself and - - -").

Witnesseth that:

Whereas, the DOE has the responsibility for the disposal of spent nuclear fuel and high-level radioactive waste of domestic origin from civilian nuclear power reactors in order to protect the public health and safety, and the environment; and

Whereas, the DOE has the responsibility, following commencement of operation of a repository, to take title to the spent nuclear fuel or high-level radioactive waste involved as expeditiously as practicable upon the request of the generator or owner of such waste or spent nuclear fuel; and

Whereas, all costs associated with the preparation, transportation, and the disposal of spent nuclear fuel and high-level radioactive waste from civilian nuclear power reactors shall be borne by the owners and generators of such fuel and waste; and

Whereas, the DOE is required to collect a full cost recovery fee from owners and generators delivering to the DOE such spent nuclear fuel and/or high level radioactive waste; and

Whereas, the DOE is authorized to enter into contracts for the permanent disposal of spent nuclear fuel and/or high-level radioactive waste of domestic origin in DOE facilities; and

Whereas, the Purchaser desires to obtain disposal services from DOE; and

Whereas, DOE is obligated and willing to provide such disposal services, under the terms and conditions hereinafter set forth; and

Whereas, this contract is made and entered into under the authority of the DOE Organization Act (Pub. L. 95-91, 42 U.S.C. 7101 *et seq.*) and the Nuclear Waste Policy Act of 1982 (Pub. L. 97-425, 42 U.S.C. 10101 *et seq.*)

Now, therefore, the parties hereto do hereby agree as follows:

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ARTICLE I - DEFINITIONS

As used throughout this contract, the following terms shall have the meanings set forth below:

1. The term *assigned three-month period* means the period that each Purchaser will be assigned by DOE, giving due consideration to the Purchaser's assignment preference, for purposes of reporting kilowatt hours generated by the Purchaser's nuclear power reactor and for establishing fees due and payable to DOE.
2. The term *cask* means a container for shipping spent nuclear fuel and/or high-level radioactive waste which meets all applicable regulatory requirements.
3. The term *civilian nuclear power reactor* means a civilian nuclear powerplant required to be licensed under sections 103 or 104(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2133, 2134(b)).
4. The term *Commission* means the United States Nuclear Regulatory Commission.
5. The term *contract* means this agreement and any duly executed amendment or modification thereto.
6. The term *Contracting Officer* means the person executing this contract on behalf of the Government, and any other officer or civilian employee who is a properly designated Contracting Officer of the DOE; and the term includes, except as otherwise provided in this contract, the authorized representative of a Contracting Officer acting within the limits of his authority.
7. The term *delivery* means the transfer of custody, f.o.b. carrier, of spent nuclear fuel or high-level radioactive waste from Purchaser to DOE at the Purchaser's civilian nuclear power reactor or such other domestic site as may be designated by the Purchaser and approved by DOE.
8. The term *disposal* means the emplacement in a repository of high-level radioactive waste, spent nuclear fuel, or other highly radioactive waste with no foreseeable intent of recovery, whether or not such emplacement permits recovery of such waste.
9. The term *DOE* means the United States Department of Energy or any duly authorized representative thereof, including the Contracting Officer.
10. The term *DOE facility* means a facility operated by or on behalf of DOE for the purpose of disposing of spent nuclear fuel and/or high-level radioactive waste, or such other facility(ies) to which spent nuclear fuel and/or high-level radioactive waste may be shipped by DOE prior to its transportation to a disposal facility.

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11. The term *full cost recovery*, means the recoument by DOE, through Purchaser fees and any interest earned, of all direct costs, indirect costs, and all allocable overhead, consistent with generally accepted accounting principles consistently applied, of providing disposal services and conducting activities authorized by the Nuclear Waste Policy Act of 1982 (Pub. L. 97-425). As used herein, the term *cost* includes the application of Nuclear Waste Fund moneys for those uses expressly set forth in section 302 (d) and (e) of the said Act and all other uses specified in the Act.

12. The term *high-level radioactive waste (HLW)* means -

(a) the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and

(b) other highly radioactive material that the Commission, consistent with existing law, determines by rule requires permanent isolation.

13. The term *electricity (kilowatt hours) generated and sold* means gross electrical output produced by a civilian nuclear power reactor measured at the output terminals of the turbine generator minus the normal onsite nuclear station service loads during the time electricity is being generated multiplied by the total energy adjustment factor. For purposes of this provision, the following definitions shall apply:

a. The term *Total Energy Adjustment Factor (TEAF)* means the sum of individual owners' weighted energy adjustment factors.

b. The term *Weighted Energy Adjustment Factor (WEAF)* means the product of an owner's energy adjustment factor times the owner's share of the plant.

c. The term *Owner's Energy Adjustment Factor (OEAF)* means the sum of the individual owner's adjustment for sales to ultimate consumers and adjustment for sales for resale.

d. The term *Owner's Share of the plant (OS)* means the owner's fraction of metered electricity sales, the owner's fraction of plant ownership, or the sponsor company's fixed entitlement percentage of the plant's output. This definition includes joint owners of generating companies or participants in a generation and transmission cooperative.

e. The term *Adjustment for Sales to ultimate Consumer (ASC)* means the owner's fraction of sales to the ultimate consumer multiplied by the owner's sales to ultimate consumer adjustment factor.

f. The term *Fraction of Sales to ultimate Consumer (FSC)* means the owner's fractional quantity of electricity sold to the ultimate consumer relative to the total of electricity sales (sales to ultimate consumers plus the sales for resale).

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g. The term *Sales to ultimate Consumer Adjustment Factor (SCAF)* means one minus the quotient of all electricity lost or otherwise not sold for each owner divided by the total electricity available for disposition to ultimate consumers. Electricity lost or otherwise not sold includes:

- (1) Energy furnished without charge;
- (2) Energy used by the company;
- (3) Transmission losses;
- (4) Distribution losses; and
- (5) Other unaccounted losses as reported to the Federal Government "Annual Report of Major Electric Utilities, Licensees and Others," Federal Energy Regulatory Commission (FERC) Form No.1; Rural Electrification Administration (REA) Forms 7 and 11 if appropriate; or the "Annual Electric Utility Report," Energy Information Administration (EIA) Form EIA-861.

h. The term *Total Electricity Available for Disposition to Ultimate Consumers* means the reporting year's total of all of a utility's electricity supply which is available for disposition, expressed in kilowatt hours, and is equal to the sum of the energy sources minus the electricity sold for resale by the utility.

i. The term *Adjustment for Sales for Resale (ASR)* means the owner's fraction of sales for resale multiplied by the national average adjustment factor.

j. The term *Fraction of Sales for Resale (FSR)* means the owner's fractional quantity of electricity sold for resale by the utility relative to the total of electricity sales.

k. The term *National Average Adjustment Factor (NAF)* means the ratio of the national total of electricity sold to the national total of electricity available for disposition, based on the most recent 3 years of national data provided to the Federal Government, and will be set by the Contracting Officer. This term will be evaluated annually and revised in increments of .005.

l. Pumped storage losses. If the proportion of nuclear generated electricity consumed by a pumped-storage hydro facility can be measured or estimated and if the electricity losses associated with pumped storage facilities can be documented (e.g. based on routine and uniform records of district power data on contributions from different electricity sources), a prorated nuclear share shall be allowed as an offset to gross electricity generation reported on the annex A of appendix G, NWP-830G form. Specific methodologies for calculating these offsets must be approved by the Contracting Officer in advance.

Instructions to annex A of appendix G, NWP-830G provide the necessary information to calculate the energy adjustment factors.

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14. The term *metric tons uranium* means that measure of weight, equivalent to 2,204.6 pounds of uranium and other fissile and fertile material that are loaded into a reactor core as fresh fuel.

15. The term *Purchaser's site* means the location of Purchaser's civilian nuclear power reactor or such other location as the Purchaser may designate.

16. The term *quarterly Treasury rate* means the current value of funds rate as specified by the Treasury Fiscal Requirements Manual, Volume I, Part 6, section 8020.20. This rate is published quarterly in the FEDERAL REGISTER prior to the beginning of the affected quarter.

17. The term *shipping lot* means a specified quantity of spent nuclear fuel or high-level radioactive waste designated by Purchaser for delivery to DOE beginning on a specified date.

18. The term *spent nuclear fuel (SNF)* means fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing.

19. The term *spent nuclear fuel and high-level radioactive waste of domestic origin* means irradiated fuel material used, and radioactive wastes resulting from such use, in nuclear power reactors located only in the United States.

20. The term *year* means the period which begins on October 1 and ends on September 30.

ARTICLE II - SCOPE

This contract applies to the delivery by Purchaser to DOE of SNF and/or HLW of domestic origin from civilian nuclear power reactors, acceptance of title by DOE to such SNF and/or HLW, subsequent transportation, and disposal of such SNF and/or HLW and, with respect to such material, establishes the fees to be paid by the Purchaser for the services to be rendered hereunder by DOE. The SNF and/or HLW shall be specified in a delivery commitment schedule as provided in Article V below. The services to be provided by DOE under this contract shall begin, after commencement of facility operations, not later than January 31, 1998 and shall continue until such time as all SNF and/or HLW from the civilian nuclear power reactors specified in appendix A, annexed hereto and made a part hereof, has been disposed of.

ARTICLE III - TERM

The term of this contract shall be from the date of execution until such time as DOE has accepted, transported from the Purchaser's site(s) and disposed of all SNF and/or HLW of domestic origin from the civilian nuclear power reactor(s) specified in appendix A.

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ARTICLE IV - RESPONSIBILITIES OF THE PARTIES

A. Purchaser's Responsibilities

1. Discharge Information.

(a) On an annual basis, commencing October 1, 1983, the Purchaser shall provide DOE with information on actual discharges to date and projected discharges for the next ten (10) years in the form and content set forth in appendix B, annexed hereto and made a part hereof. The information to be provided will include estimates and projections and will not be Purchaser's firm commitment with respect to discharges or deliveries.

(b) No later than October 1, 1983, the Purchaser shall provide DOE with specific information on:

- (1) Total spent nuclear fuel inventory as of April 7, 1983;
- (2) Total number of fuel assemblies removed from the particular reactor core prior to 12:00 a.m. April 7, 1983 for which there are plans for reinsertion in the core, indicating the current planned dates for reinsertion in the core. Estimates of the burned and unburned portion of each individual assembly are to be provided.

(c) In the event that the Purchaser fails to provide the annual forecast in the form and content required by DOE, DOE may, in its sole discretion, require a rescheduling of any delivery commitment schedule then in effect.

2. Preparation for Transportation.

(a) The Purchaser shall arrange for, and provide, all preparation, packaging, required inspections, and loading activities necessary for the transportation of SNF and/or HLW to the DOE facility. The Purchaser shall notify DOE of such activities sixty (60) days prior to the commencement of such activities. The preparatory activities by the Purchaser shall be made in accordance with all applicable laws and regulations relating to the Purchaser's responsibilities hereunder. DOE may designate a representative to observe the preparatory activities conducted by the Purchaser at the Purchaser's site, and the Purchaser shall afford access to such representative.

(b) Except as otherwise agreed to by DOE, the Purchaser shall advise DOE, in writing as specified in appendix F, annexed hereto and made a part hereof, as to the description of the material in each shipping lot sixty (60) days prior to scheduled DOE transportation of that shipping lot.

(c) The Purchaser shall be responsible for incidental maintenance, protection and preservation of any and all shipping casks furnished to the Purchaser by DOE for the performance of this contract. The Purchaser shall be liable for any loss of or damage to such DOE-furnished property, and for expenses incidental to such loss or damage while such

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casks are in the possession and control of the Purchaser except as otherwise provided for hereunder. Routine cask maintenance, such as scheduled overhauls, shall not be the responsibility of the Purchaser.

B. DOE Responsibilities

1. DOE shall accept title to all SNF and/or HLW, of domestic origin, generated by the civilian nuclear power reactor(s) specified in appendix A, provide subsequent transportation for such material to the DOE facility, and dispose of such material in accordance with the terms of this contract.
2. DOE shall arrange for, and provide, a cask(s) and all necessary transportation of the SNF and/or HLW from the Purchaser's site to the DOE facility. Such cask(s) shall be furnished sufficiently in advance to accommodate scheduled deliveries. Such cask(s) shall be suitable for use at the Purchaser's site, meet applicable regulatory requirements, and be accompanied by pertinent information including, but not limited to, the following:
 - (a) Written procedures for cask handling and loading, including specifications on Purchaser-furnished canisters for containment of failed fuel;
 - (b) Training for Purchaser's personnel in cask handling and loading, as may be necessary;
 - (c) Technical information, special tools, equipment, lifting trunnions, spare parts and consumables needed to use and perform incidental maintenance on the cask(s); and
 - (d) Sufficient documentation on the equipment supplied by DOE.
3. DOE may fulfill any of its obligations, or take any action, under this contract either directly or through contractors.
4. DOE shall annually provide to the Purchaser pertinent information on the waste disposal program including information on cost projections, project plans and progress reports.
5. (a) Beginning on April 1, 1991, DOE shall issue an annual acceptance priority ranking for receipt of SNF and/or HLW at the DOE repository. This priority ranking shall be based on the age of SNF and/or HLW as calculated from the date of discharge of such material from the civilian nuclear power reactor. The oldest fuel or waste will have the highest priority for acceptance, except as provided in paragraphs B and D of Article V and paragraph B.3 of Article VI hereof.

(b) Beginning not later than July 1, 1987, DOE shall issue an annual capacity report for planning purposes. This report shall set forth the projected annual receiving capacity for the DOE facility(ies) and the annual acceptance ranking relating to DOE contracts for the disposal of SNF and/or HLW including, to the extent available, capacity information for ten (10) years following the projected commencement of operation of the initial DOE facility.

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ARTICLE V - DELIVERY OF SNF AND/OR HLW

A. Description of SNF and HLW

The Purchaser shall deliver to DOE and DOE shall, as provided in this contract, accept the SNF and/or HLW which is described in accordance with Article VI.A. of this contract, for disposal thereof.

B. Delivery Commitment Schedule

1. Delivery commitment schedule(s), in the form set forth in appendix C annexed hereto and made a part hereof, for delivery of SNF and/or HLW shall be furnished to DOE by Purchaser. After DOE has issued its proposed acceptance priority ranking, as described in paragraph B.5 of Article IV hereof, beginning January 1, 1992 the Purchaser shall submit to DOE the delivery commitment schedule(s) which shall identify all SNF and/or HLW the Purchaser wishes to deliver to DOE beginning sixty-three (63) months thereafter. DOE shall approve or disapprove such schedules within three (3) months after receipt. In the event of disapproval, DOE shall advise the Purchaser in writing of the reasons for such disapproval and request a revised schedule from the Purchaser, to be submitted to DOE within thirty (30) days after receipt of DOE's notice of disapproval.

2. DOE shall approve or disapprove such revised schedule(s) within sixty (60) days after receipt. In the event of disapproval, DOE shall advise the Purchaser in writing of the reasons for such disapproval and shall submit its proposed schedule(s). If these are not acceptable to the Purchaser, the parties shall promptly seek to negotiate mutually acceptable schedule(s). Purchaser shall have the right to adjust the quantities of SNF and/or HLW plus or minus (+/-) twenty percent (20%), and the delivery schedule up to two (2) months, until the submission of the final delivery schedule.

C. Final Delivery Schedule

Final delivery schedule(s), in the form set forth in appendix D, annexed hereto and made a part hereof, for delivery of SNF and/or HLW covered by an approved delivery commitment schedule(s) shall be furnished to DOE by Purchaser. The Purchaser shall submit to DOE final delivery schedules not less than twelve (12) months prior to the delivery date specified therein. DOE shall approve or disapprove a final delivery schedule within forty-five (45) days after receipt. In the event of disapproval, DOE shall advise the Purchaser in writing of the reasons for such disapproval and shall request a revised schedule from the Purchaser, to be submitted to DOE within thirty (30) days after receipt of DOE's notice of disapproval. DOE shall approve or disapprove such revised schedule(s) within sixty (60) days after receipt. In the event of disapproval, DOE shall advise the Purchaser in writing of the reasons for such disapproval and shall submit its proposed schedule(s). If these are not acceptable to the Purchaser, the parties shall promptly seek to negotiate mutually acceptable schedule(s).

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D. Emergency Deliveries

Emergency deliveries of SNF and/or HLW may be accepted by DOE before the date provided in the delivery commitment schedule upon prior written approval by DOE.

E. Exchanges

Purchaser shall have the right to determine which SNF and/or HLW is delivered to DOE; *provided, however,* that Purchaser shall comply with the requirements of this contract. Purchaser shall have the right to exchange approved delivery commitment schedules with parties to other contracts with DOE for disposal of SNF and/or HLW; *provided, however,* that DOE shall, in advance, have the right to approve or disapprove, in its sole discretion, any such exchanges. Not less than six (6) months prior to the delivery date specified in the Purchaser's approved delivery commitment schedule, the Purchaser shall submit to DOE an exchange request, which states the priority rankings of both the Purchaser hereunder and any other Purchaser with whom the exchange of approved delivery commitment schedules is proposed. DOE shall approve or disapprove the proposed exchange within thirty (30) days after receipt. In the event of disapproval, DOE shall advise the Purchaser in writing of the reasons for such disapproval.

ARTICLE VI.- CRITERIA FOR DISPOSAL

A. General Requirements

1. *Criteria.*

(a) Except as otherwise provided in this contract, DOE shall accept hereunder only such SNF and/or HLW which meets the General Specifications for such fuel and waste as set forth in appendix E, annexed hereto and made a part hereof.

(b) Purchaser shall accurately classify SNF and/or HLW prior to delivery in accordance with paragraphs B and D of appendix E.

2. *Procedures.*

(a) Purchaser shall provide to DOE a detailed description of the SNF and/or HLW to be delivered hereunder in the form and content as set forth in appendix F, annexed hereto and made a part hereof. Purchaser shall promptly advise DOE of any changes in said SNF and/or HLW as soon as they become known to the purchaser.

(b) DOE's obligation for disposing of SNF under this contract also extends to other than standard fuel; however, for any SNF which has been designated by the Purchaser as other than standard fuel, as that term is defined in appendix E, the Purchaser shall obtain delivery and procedure confirmation from DOE prior to delivery. DOE shall advise Purchaser within

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sixty (60) days after receipt of such confirmation request as to the technical feasibility of disposing of such fuel on the currently agreed to schedule and any schedule adjustment for such services.

B. Acceptance Procedures

1. Acceptance Priority Ranking.

Delivery commitment schedules for SNF and/or HLW may require the disposal of more material than the annual capacity of the DOE disposal facility (or facilities) can accommodate. The following acceptance priority ranking will be utilized:

(a) Except as may be provided for in subparagraph (b) below and Article V.D. of this contract, acceptance priority shall be based upon the age of the SNF and/or HLW as calculated from the date of discharge of such material from the civilian nuclear power reactor. DOE will first accept from Purchaser the oldest SNF and/or HLW for disposal in the DOE facility, except as otherwise provided for in paragraphs B and D of Article V.

(b) Notwithstanding the age of the SNF and/or HLW, priority may be accorded any SNF and/or HLW removed from a civilian nuclear power reactor that has reached the end of its useful life or has been shut down permanently for whatever reason.

2. Verification of SNF and/or HLW.

During cask loading and prior to acceptance by DOE for transportation to the DOE facility, the SNF and/or HLW description of the shipping lot shall be subject to verification by DOE. To the extent the SNF and/or HLW is consistent with the description submitted and approved, in accordance with appendices E and F, DOE agrees to accept such SNF and/or HLW for disposal when DOE has verified the SNF and/or HLW description, determined the material is properly loaded, packaged, marked, labeled and ready for transportation, and has taken custody, as evidenced in writing, of the material at the Purchaser's site, f.o.b. carrier. A properly executed off-site radioactive shipment record describing cask contents must be prepared by the Purchaser along with a signed certification which states: "This is to certify that the above-named materials are properly described, classified, packaged, marked and labeled and are in proper condition for transfer according to the applicable regulations of the U. S. Department of Transportation."

3. Improperly described SNF and/or HLW.

(a) *Prior to Acceptance* - If SNF and/or HLW is determined by DOE to be improperly described prior to acceptance by DOE at the Purchaser's site, DOE shall promptly notify the Purchaser in writing of such determination. DOE reserves the right, in its sole discretion, to refuse to accept such SNF and/or HLW until the SNF and/or HLW has been properly described. The Purchaser shall not transfer such SNF and/or HLW to DOE unless DOE agrees to accept such SNF and/or HLW under such other arrangements as may be agreed to, in writing, by the parties.

D4 ✓

(b) *After Acceptance* - If subsequent to its acceptance DOE finds that such SNF and/or HLW is improperly described, DOE shall promptly notify the Purchaser, in writing, of such finding. In the event of such notification, Purchaser shall provide DOE with a proper designation within thirty (30) days. In the event of a failure by the Purchaser to provide such proper designation, DOE may hold in abeyance any and all deliveries scheduled hereunder.

ARTICLE VII - TITLE

Title to all SNF and/or HLW accepted by DOE for disposal shall pass to DOE at the Purchaser's site as provided for in Article VI hereof. DOE shall be solely responsible for control of all material upon passage of title. DOE shall have the right to dispose as it sees fit of any SNF and/or HLW to which it has taken title. The Purchaser shall have no claim against DOE or the Government with respect to such SNF or HLW nor shall DOE or the Government be obligated to compensate the Purchaser for such material.

ARTICLE VIII - FEES AND TERMS OF PAYMENT

A. Fees

1. Effective April 7, 1983, Purchaser shall be charged a fee in the amount of 1.0 mill per kilowatt hour (1M/kWh) electricity generated and sold.

2. For SNF, or solidified high-level radioactive waste derived from SNF, which fuel was used to generate electricity in a civilian nuclear power reactor prior to April 7, 1983, a one-time fee will be assessed by applying industry-wide average dollar per kilogram charges to four (4) distinct ranges of fuel burnup so that the integrated cost across all discharged (i.e. spent) fuel is equivalent to an industry-wide average charge of 1.0 mill per kilowatt-hour. For purposes of this contract, discharged nuclear fuel is that fuel removed from the reactor core with no plans for reinsertion. In the event that any such fuel withdrawn with plans for reinsertion is not reinserted, then the applicable fee for such fuel shall be calculated as set forth in this paragraph 2. The categories of spent nuclear fuel burnup and the fee schedule are listed below:

[In 1982 dollars]

Nuclear spent fuel burnup range	Dollars per kilogram
0 to 5,000 MWDT/MTU	\$80.00
5,000 to 10,000 MWDT/MTU	142.00
10,000 to 20,000 MWDT/MTU	162.00
Over 20,000 MWDT/MTU	184.00

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This fee shall not be subject to adjustment, and the payment thereof by the Purchaser shall be made to DOE as specified in paragraph B of this Article VIII.

3. For in-core fuel as of April 7, 1983, that portion of the fuel burned through April 6, 1983 shall be subject to the one-time fee as calculated in accordance with the following methodology:

- (a) determine the total weight in kilograms of uranium loaded initially in the particular core;
- (b) determine the total megawatt-days (thermal) which have been generated by all of the fuel assemblies in the said core as of 12:00 A.M. April 7, 1983;
- (c) divide the megawatt-days (thermal) generated in the said core by the total metric tons of initially loaded uranium in that core and multiply the quotient by the conversion factor 0.0078 to obtain a value in dollars per kilogram; and
- (d) multiply the dollars per kilogram value by the kilograms determined in (a) above to derive the dollar charge for the one-time fee to be paid for the specified in-core fuel as of 12:00 A.M. April 7, 1983.

For purposes of this contract, in-core fuel is that fuel in the reactor core as of the date specified, plus any fuel removed from the reactor with plans for reinsertion. That portion of such fuel unburned as of 12:00 A.M. April 7, 1983 shall be subject to the 1.0 mill per kilowatt-hour charge.

4. DOE will annually review the adequacy of the fees and adjust the 1M/KWH fee, if necessary, in order to assure full cost recovery by the Government. Any proposed adjustment to the said fee will be transmitted to Congress and shall be effective after a period of ninety (90) days of continuous session has elapsed following receipt of such transmittal unless either House of Congress adopts a resolution disapproving the proposed adjustment. Any adjustment to the 1M/KWH fee under paragraph A.1. of this Article VIII shall be prospective.

B. Payment

1. For electricity generated and sold by the Purchaser's civilian nuclear power reactor(s) on or after April 7, 1983, fees shall be paid quarterly by the Purchaser and must be received by DOE not later than the close of the last business day of the month following the end of each assigned 3-month period. The first payment shall be due on July 31, 1983, for the period April 7, 1983, to June 30, 1983. (Add as applicable: A one-time adjustment period payment shall be due on ____, for the period ____ to ____.) The assigned 3-month period, for purposes of payment and reporting of electricity generated and sold shall begin ____.

2. For SNF discharged prior to April 7, 1983, and for in-core burned fuel as of 12:00 A.M. April 7, 1983, the Purchaser shall, within two (2) years of contract execution, select one of the following fee payment options:

- (a) *Option 1* - The Purchaser's financial obligation for said fuel shall be prorated evenly over forty (40) quarters and will consist of the fee plus interest on the outstanding fee balance. The interest from April 7, 1983, to date of the first payment is to be calculated based upon

64

the 13-week Treasury bill rate, as reported on the first such issuance following April 7, 1983, and compounded quarterly thereafter by the 13-week Treasury bill rates as reported on the first such issuance of each succeeding assigned three-month period. Beginning with the first payment, interest is to be calculated on Purchaser's financial obligation plus accrued interest, at the ten-year Treasury note rate in effect on the date of the first payment. In no event shall the end of the forty (40) quarters extend beyond the first scheduled delivery date as reflected in the DOE-approved delivery commitment schedule. All payments shall be made concurrently with the assigned three month period payments. At any time prior to the end of the forty (40) quarters, Purchaser may, without penalty, make a full or partial lump sum payment at any of the assigned three month period payment dates. Subsequent quarterly payments will be appropriately reduced to reflect the reduction in the remaining balance in the fee due and payable. The remaining financial obligation, if any, will be subject to interest at the same ten-year Treasury note rate over the remainder of the ten year period.

(b) *Option 2* - The Purchaser's financial obligation shall be paid in the form of a single payment anytime prior to the first delivery, as reflected in the DOE approved delivery commitment schedule, and shall consist of the fee plus interest on the outstanding fee balance. Interest is to be calculated from April 7, 1983, to the date of the payment based upon the 13-week Treasury bill rate, as reported on the first such issuance following April 7, 1983, and compounded quarterly thereafter by the 13-week Treasury bill rates as reported on the first such issuance of each succeeding assigned three-month period until payment.

(c) *Option 3* - The Purchaser's financial obligation shall be paid prior to June 30, 1985, or prior to two (2) years after contract execution, whichever comes later, in the form of a single payment and shall consist of all outstanding fees for SNF and in-core fuel burned prior to April 7, 1983. Under this option, no interest shall be due to DOE from April 7, 1983, to the date of full payment on the outstanding fee balance.

3. *Method of Payment:*

(a) Payments shall be made by wire transfer, in accordance with instructions specified by DOE in appendix G, annexed hereto and made a part hereof, and must be received within the time periods specified in paragraph B.1. of this Article VIII.

(b) The Purchaser will complete a Standard Remittance Advice, as set forth in appendix G, for each assigned three month period payment, and mail it postmarked no later than the last business day of the month following each assigned three month period to Department of Energy, Office of Controller, Cash Management Division, Box 500, Room D-208, Germantown, Maryland 20874.

4. Any fees not paid on a timely basis or underpaid because of miscalculation will be subject to interest as specified in paragraph C of this Article VIII.

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C. Interest on Late Fees

1. DOE will notify the Purchaser of amounts due only when unpaid or underpaid by the dates specified in paragraph B above. Interest will be levied according to the following formula:
Interest=Unpaid balance due to DOE for assigned three month period x Quarterly Treasury rate plus six percent (6%) x Number of months late including month of payment (fractions rounded up to whole months)/12.
2. Interest is payable at any time prior to the due date for the subsequent assigned three month period fee payment. Nonpayment by the end of the subsequent assigned three month period will result in compounding of interest due. Purchaser shall complete a Standard Remittance Advice of interest payments.
3. Following the assessment of a late fee by DOE, payments will be applied against accrued interest first and the principal thereafter.

D. Effect of Payment

Upon payment of all applicable fees, interest and penalties on unpaid or underpaid amounts, the Purchaser shall have no further financial obligation to DOE for the disposal of the accepted SNF and/or HLW.

E. Audit

1. The DOE or its representative shall have the right to perform any audits or inspections necessary to determine whether Purchaser is paying the correct amount under the fee schedule and interest provisions set forth in paragraphs A, B and C above.
2. Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.
3. The Purchaser shall furnish DOE with such records, reports and data as may be necessary for the determination of quantities delivered hereunder and for final settlement of amounts due under this contract and shall retain and make available to DOE and its authorized representative examination at all reasonable times such records, reports and data for a period of three (3) years from the completion of delivery of all material under this contract.

ARTICLE IX - DELAYS

A. Unavoidable Delays by Purchaser or DOE

Neither the Government nor the Purchaser shall be liable under this contract for damages caused by failure to perform its obligations hereunder, if such failure arises out of causes beyond the control and without the fault or negligence of the party failing to perform. In the event circumstances beyond the reasonable control of the Purchaser or DOE - such as acts of God, or

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of the public enemy, acts of Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes and unusually severe weather - cause delay in scheduled delivery, acceptance or transport of SNF and/or HLW, the party experiencing the delay will notify the other party as soon as possible after such delay is ascertained and the parties will readjust their schedules, as appropriate, to accommodate such delay.

B. Avoidable Delays by Purchaser or DOE

In the event of any delay in the delivery, acceptance or transport of SNF and/or HLW to or by DOE caused by circumstances within the reasonable control of either the Purchaser or DOE or their respective contractors or suppliers, the charges and schedules specified by this contract will be equitably adjusted to reflect any estimated additional costs incurred by the party not responsible for or contributing to the delay.

ARTICLE X - SUSPENSION

A. In addition to any other rights DOE may have hereunder, DOE reserves the right, at no cost to the Government, to suspend this contract or any portion thereof upon written notice to the Purchaser within ninety (90) days of the Purchaser's failure to perform its obligations hereunder, and the Purchaser's failure to take corrective action within thirty (30) days after written notice of such failure to perform as provided above, unless such failure shall arise from causes beyond the control and without the fault or negligence of the Purchaser, its contractors or agents. However, the Purchaser's obligation to pay fees required hereunder shall continue unaffected by any suspension. Any such suspension shall be rescinded if and when DOE determines that Purchaser has completed corrective action.

B. The DOE reserves the right to suspend any scheduled deliveries in the event that a national emergency requires that priority be given to Government programs to the exclusion of the work under this contract. In the event of such a suspension by the Government, the DOE shall refund that portion of payments representing services not delivered as determined by the Contracting Officer to be an equitable adjustment. Any disagreement arising from the refund payment, if any, shall be resolved as provided in the clause of this contract, entitled "DISPUTES".

ARTICLE XI - REMEDIES

Nothing in this contract shall be construed to preclude either party from asserting its rights and remedies under the contract or at law.

ARTICLE XII - NOTICES

All notices and communications between the parties under this contract (except notices published in the FEDERAL REGISTER) shall be in writing and shall be sent to the following addressees:

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To DOE: U.S. Department of Energy
Office of Civilian Radioactive Waste Management
1000 Independence Ave, SW
Washington, DC 20585
Attn: Contracting Officer, Standard Contract

To the Purchaser: Steven R. Sullivan
Sr. Vice President, General Counsel & Secretary
Ameren Corporation
1901 Chouteau Avenue
St. Louis, MO 63103

However, the parties may change the addresses or addressees for such notices or communications without formal modification to this contract; *provided, however*, that notice of such changes shall be given by registered mail.

ARTICLE XIII - REPRESENTATION CONCERNING NUCLEAR HAZARDS INDEMNITY

A. DOE represents that it will include in its contract(s) for the operation of any DOE facility an indemnity agreement based upon Section 170(d) of the Atomic Energy Act of 1954, as amended, a copy of which agreement shall be furnished to the Purchaser; that under said agreement, DOE shall have agreed to indemnify the contractor and other persons indemnified against claims for public liability (as defined in said Act) arising out of or in connection with contractual activities; that the indemnity shall apply to covered nuclear incidents which (1) take place at a contract location; or (2) arise out of or in the course of transportation of source, special nuclear or by-product material to or from a contract location. The obligation of DOE to indemnify shall be subject to the conditions stated in the indemnity agreement.

B. The provisions of this Article XIII shall continue beyond the term of this contract.

ARTICLE XIV - ASSIGNMENT

The rights and duties of the Purchaser may be assignable with transfer of title to the SNF and/or HLW involved; *provided, however*, that notice of any such transfer shall be made to DOE within ninety (90) days of transfer.

ARTICLE XV - AMENDMENTS

The provisions of this contract have been developed in the light of uncertainties necessarily attendant upon long-term contracts. Accordingly, at the request of either DOE or Purchaser, the parties will negotiate and, to the extent mutually agreed, amend this contract as the parties may

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deem to be necessary or proper to reflect their respective interests; *provided, however*, that any such amendment shall be consistent with the DOE final rule published in the FEDERAL REGISTER on April 18, 1983 entitled, "Standard Contract for Disposal of SNF and/or HLW", as the same may be amended from time to time.

ARTICLE XVI - DISPUTES

A. Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Purchaser. The decision of the Contracting Officer shall be final and conclusive unless within ninety (90) days from the date of receipt of such copy, the Purchaser mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the DOE Board of Contract Appeals (Board). The decision of the Board shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Purchaser shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

B. For Purchaser claims of more than \$50,000, the Purchaser shall submit with the claim a certification that the claim is made in good faith; the supporting data are accurate and complete to the best of the Purchaser's knowledge and belief; and the amount requested accurately reflects the contract adjustment for which the Purchaser believes the Government is liable. The certification shall be executed by the Purchaser if an individual. When the Purchaser is not an individual, the certification shall be executed by a senior company official in charge at the Purchaser's plant or location involved, or by an officer or general partner of the Purchaser having overall responsibility for the conduct of the Purchaser's affairs.

C. For Purchaser claims of \$50,000 or less, the Contracting Officer must render a decision within sixty (60) days. For Purchaser claims in excess of \$50,000, the Contracting Officer must decide the claim within sixty (60) days or notify the Purchaser of the date when the decision will be made.

D. This "DISPUTES" clause does not preclude consideration of law questions in connection with decisions provided for in paragraph A above; *provided, however*, that nothing in this contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

ARTICLE XVII - OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

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ARTICLE XVIII - COVENANT AGAINST CONTINGENT FEES

The Purchaser warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Purchaser for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or in its discretion to increase the contract price or consideration, or otherwise recover, the full amount of such commission, brokerage, or contingent fee.

ARTICLE XIX - EXAMINATION OF RECORDS

The Purchaser agrees that the Comptroller General of the United States or any of his duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers and records of the Purchaser involving transactions related to this contract until the expiration of three years after final payment under this contract.

ARTICLE XX - PERMITS

The Government and the Purchaser shall procure all necessary permits or licenses (including any special nuclear material licenses) and comply with all applicable laws and regulations of the United States, States and municipalities necessary to execute their respective responsibilities and obligations under this contract.

ARTICLE XXI- RIGHTS IN TECHNICAL DATA

A. Definitions.

1. *Technical data* means recorded information regardless of form or characteristic, of a specific or technical nature. It may, for example, document research, experimental, developmental, or demonstration, or engineering work, or be usable or used to define a design or process, or to procure, produce, support, maintain or operate material. The data may be graphic or pictorial delineations in media such as drawings or photographs, text in specifications or related performance or design-type documents or computer software (including computer programs, computer software data bases, and computer software documentation). Examples of technical data include research and engineering data, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identification, and related information. Technical data as used herein do not include financial reports, cost analyses, and other information incidental to contract administration.

2. *Proprietary data* means technical data which embody trade secrets developed at private expense, such as design procedures or techniques, chemical composition of materials, or manufacturing methods, processes, or treatments, including minor modifications thereof, provided that such data:

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- (a) Are not generally known or available from other sources without obligation concerning their confidentiality;
- (b) Have not been made available by the owner to others without obligation concerning its confidentiality; and
- (c) Are not already available to the Government without obligation concerning their confidentiality.

3. *Contract data* means technical data first produced in the performance of the contract, technical data which are specified to be delivered under the contract, or technical data actually delivered in connection with the contract.

4. *Unlimited rights* means rights to use, duplicate, or disclose technical data, in whole or in part, in any manner and for any purpose whatsoever, and to permit others to do so.

B. Allocation of Rights.

1. The Government shall have:

- (a) Unlimited rights in contract data except as otherwise provided below with respect to proprietary data properly marked as authorized by this clause;
- (b) The right to remove, cancel, correct or ignore any marking not authorized by the terms of this contract on any technical data furnished hereunder, if in response to a written inquiry by DOE concerning the proprietary nature of the markings, the Purchaser fails to respond thereto within 60 days or fails to substantiate the proprietary nature of the markings. In either case, DOE will notify the Purchaser of the action taken;
- (c) No rights under this contract in any technical data which are not contract data.

2. Subject to the foregoing provisions of this rights in technical data clause, the Purchaser shall have the right to mark proprietary data it furnishes under the contract with the following legend and no other, the terms of which shall be binding on the Government:

LIMITED RIGHTS LEGEND

This "proprietary data," furnished under "Contract No. DE-CR01-09QW0902" with the U.S. Department of Energy may be duplicated and used by the Government with the express limitations that the "proprietary data" may not be disclosed outside the Government or be used for purposes of manufacture without prior permission of the Purchaser, except that further disclosure or use may be made solely for the following purposes:

- (a) This "proprietary data" may be disclosed for evaluation purposes under the restriction that the "proprietary data" be retained in confidence and not be further disclosed;

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(b) This "proprietary data" may be disclosed to contractors participating in the Government's program of which this contract is a part, for information or use in connection with the work performed under their contracts and under the restriction that the "proprietary data" be retained in confidence and not be further disclosed; or

(c) This "proprietary data" may be used by the Government or others on its behalf for emergency work under the restriction that the "proprietary data" be retained in confidence and not be further disclosed. This legend shall be marked on any reproduction of this data in whole or in part.

3. In the event that proprietary data of a third party, with respect to which the Purchaser is subject to restrictions on use or disclosure, is furnished with the Limited Rights Legend above, Purchaser shall secure the agreement of such third party to the rights of the Government as set forth in the Limited Rights Legend. DOE shall upon request furnish the names of those contractors to which proprietary data has been disclosed.

ARTICLE XXII - ENTIRE CONTRACT

A. This contract, which consists of Articles I through XXII and appendices A through G, annexed hereto and made a part hereof, contains the entire agreement between the parties with respect to the subject matter hereof. Any representation, promise, or condition not incorporated in this contract shall not be binding on either party. No course of dealing or usage of trade or course of performance shall be relevant to explain or supplement any provision contained in this contract.

B. Nothing in this contract is intended to affect in any way the contractual obligation of any other persons with whom the Purchaser may have contracted with respect to assuming some or all disposal costs or to accept title to SNF and/or HLW.

C. *Appendices*

A. Nuclear Power Reactor(s) or Other Facilities Covered

B. Discharge Information (Ten Year; Annual)

C. Delivery Commitment Schedule

D. Final Delivery Schedule

E. General Specifications

F. Detailed Description of Purchaser's Fuel

G. Standard Remittance Advice For Payment of Fees

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In Witness Whereof, the parties hereto have executed this contract as of the day and year first above written.

United States of America
United States Department of Energy

By: [Signature]
(Contracting Officer)

Witnesses as to Execution on Behalf of Purchaser

Scott Bond
(Name)

Callaway Plant
Fulton, MO 65251
(Address)

[Signature]
(Name)

Callaway Plant
(Address)
Fulton, Mo 65251

Union Electric Company d/b/a AmerenUE
(Purchaser's Company Name)

By: [Signature]

Title: Vice President Engineering

I, Ronald K. Evans (Name), certify that I am the ASSISTANT SECRETARY (Title) RKE of the corporation named as Purchaser herein; that Timothy E. Herrmann (Name) who signed this document on behalf of the Purchaser was then Vice President Engineer (Title) of said corporation; that said document was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

In Witness Whereof, I have hereunto affixed my hand and the seal of said corporation this 7th day of January, 20 09.

(Corporate Seal)

[Signature]
(Signature)

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APPENDIX A

Nuclear Power Reactor(s) or Other Facilities Covered

Purchaser Union Electric Company

Contract Number/Date DECRO109RNO9021 / 1/12/2009

Reactor/Facility Name Callaway Plant Unit 2

Location:

Street Junction of Highway CC and Highway O

City Fulton

County/State Callaway / Missouri

Zip Code 65251

Capacity (MWE) – Gross 1600 MW(e)

Reactor Type:

BWR

PWR

Other (Identify) _____

Facility Description Callaway Plant Unit 2 is a PWR utilizing the U.S. Evolutionary Power Reactor design that is sited on existing Callaway Plant Unit 1 site.

Date of Commencement of Operation (actual or estimated) (Dec 2017)

~~NRC License #~~ NRC Docket #: 52-037

By Purchaser:

Signature _____

Title _____

Date _____

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APPENDIX B

Ten Year Discharge Forecast

To be used for DOE planning purposes only and does not represent a firm commitment by Purchaser.

Purchaser

Contract Number/Date - - - - /

Reactor/Facility Name

Location:

Street

City

County/State - - - - /

Zip Code

Type:

BWR

PWR

Other (Identify)

	1	2	3	4	5	6	7	8	9	10	10 yr total
Discharge date - mo/yr (or refueling shut down date)											
Metric tons - initial											
- discharged											
Number of assemblies discharged (per cycle)											

By Purchaser:

Signature

Title

Date

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APPENDIX B (Enclosure 1)

Actual Discharges

Purchaser

Contract Number/Date

Reactor/Facility Name

Location:

Street

City

County/State

Zip Code

Type:

BWR

PWR

Other (Identify)

Refueling Shutdown Date

Metric Tons Uranium (Initial/Discharged);

Initial

Discharged

Number of Assemblies Discharged:

Any false, fictitious or fraudulent statement may be punishable by fine or imprisonment (U.S. Code, Title 18, Section 1001).

By Purchaser:

Signature

Title

Date

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APPENDIX C

Delivery Commitment Schedule

This delivery commitment schedule shall be submitted by Purchaser to DOE as specified in Article V.B. of this contract.

Purchaser

Contract Number/Date

Reactor/Facility Name

Location:

Street

City

County/State

Zip Code

Type Cask Required:

Shipping Lot Number
(Assigned by DOE)

Proposed Shipping Mode:

Truck

Rail

Barge

DOE Assigned Delivery Commitment Date

Range of Discharge Date(s) (Earliest to Latest)

Mo -- Day -- Yr -- to Mo -- Day -- Yr --

Metric Tons Uranium:

(Initial)

(Discharged)

Number of Assemblies:

BWR

PWR

Other

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Unless otherwise agreed to in writing by DOE, the Purchaser shall furnish herewith to DOE suitable proof of ownership of the SNF and/or HLW to be delivered hereunder. The Purchaser shall notify DOE in writing at the earliest practicable date of any change in said ownership.

Any false, fictitious or fraudulent statement may be punishable by fine or imprisonment (U.S. Code, Title 18, Section 1001).

By Purchaser:

Signature

Title

Date

Approved by DOE:

Technical Representative

Title

Date

Contracting Officer

Date

DKY

APPENDIX D

Final Delivery Schedule

(To be submitted to DOE by Purchaser for each designated Purchaser Delivery site not later than twelve (12) months prior to estimated date of first delivery)

Purchaser:

Contract Number/Date

Reactor/Facility Name

Location:

Street

City

County/State

Zip Code

Type(s) cask(s) required:

No. Assemblies per cask

Shipping Lot Number

Shipping Mode:

(Assigned by DOE)

Truck

Rail

Barge

Metric Tons Uranium:

(Initial)

(Discharged)

Range of Discharge Date(s) (Earliest to Latest)

(From approved commitment schedule)

Mo -- Day -- Yr -- to Mo -- Day -- Yr --

Number of Assemblies:

BWR

PWR

Other

D4

Purchaser's Delivery First Estimate

Mo -- Day -- Yr -- last Mo -- Day -- Mo --

Unless otherwise agreed to in writing by DOE, the Purchaser shall furnish herewith to DOE suitable proof of ownership of the SNF and/or HLW to be delivered hereunder. The Purchaser shall notify DOE in writing at the earliest practicable date of any change in said ownership.

To confirm acceptability of delivery date(s):

Purchaser Contact

Phone

Title

DOE Contact

Phone

Title

Any false, fictitious or fraudulent statement may be punishable by fine or imprisonment (U.S. Code, Title 18, Section 1001).

By Purchaser:

Signature

Title

Date

Approved by DOE:

Technical Representative

Title

Date

Contracting Officer

Date

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APPENDIX E

General Specifications

A. Fuel Category Identification

1. Categories - Purchaser shall use reasonable efforts, utilizing technology equivalent to and consistent with the commercial practice, to properly classify Spent Nuclear Fuel (SNF) prior to delivery to DOE, as follows:

- a. *Standard Fuel* means SNF that meets all the General Specifications therefor set forth in paragraph B below.
- b. *Nonstandard Fuel* means SNF that does not meet one or more of the General Specifications set forth in subparagraphs 1 through 5 of paragraph B below, and which is classified as Nonstandard Fuel Classes NS-1 through NS-5, pursuant to paragraph B below.
- c. *Failed Fuel* means SNF that meets the specifications set forth in subparagraphs 1 through 3 of paragraph B below, and which is classified as Failed Fuel Class F-1 through F-3 pursuant to subparagraph 6 of paragraph B below.
- d. Fuel may have "Failed Fuel" and/or several "Nonstandard Fuel" classifications

B. Fuel Description and Subclassification - General Specifications

1. Maximum Nominal Physical Dimensions.

	Boiling water reactor (BWR)	Pressurized water reactor (PWR)
Overall Length	14 feet, 11 inches	14 feet, 10 inches
Active Fuel Length	12 feet, 6 inches	12 feet, 0 inches
Cross Section	6 inches X 6 inches ¹	9 inches X 9 inches

¹ - The cross section of the fuel assembly shall not include the channel.

NOTE: Fuel that does not meet these specifications shall be classified as Nonstandard Fuel - Class NS-1.

2. *Nonfuel Components.* Nonfuel components including, but not limited to, control spiders, burnable poison rod assemblies, control rod elements, thimble plugs, fission chambers, and primary and secondary neutron sources, that are contained within the fuel assembly, or BWR channels that are an integral part of the fuel assembly, which do not require special handling, may be included as part of the spent nuclear fuel delivered for disposal pursuant to this contract.

NOTE: Fuel that does not meet these specifications shall be classified as Nonstandard Fuel - Class NS-2.

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3. *Cooling.* The minimum cooling time for fuel is five (5) years.

NOTE: Fuel that does not meet this specification shall be classified as Nonstandard Fuel - Class NS-3.

4. *Non-LWR Fuel.* Fuel from other than LWR power facilities shall be classified as Nonstandard Fuel - Class NS-4. Such fuel may be unique and require special handling, storage, and disposal facilities.

5. *Consolidated Fuel Rods.* Fuel which has been disassembled and stored with the fuel rods in a consolidated manner shall be classified as Nonstandard Fuel Class NS-5.

6. *Failed Fuel.*

a. *Visual Inspection.*

Assemblies shall be visually inspected for evidence of structural deformity or damage to cladding or spacers which may require special handling. Assemblies which (i) are structurally deformed or have damaged cladding to the extent that special handling may be required or (ii) for any reason cannot be handled with normal fuel handling equipment shall be classified as Failed Fuel - Class F-1.

b. *Previously Encapsulated Assemblies.*

Assemblies encapsulated by Purchaser prior to classification hereunder shall be classified as Failed Fuel - Class F-3. Purchaser shall advise DOE of the reason for the prior encapsulation of assemblies in sufficient detail so that DOE may plan for appropriate subsequent handling.

c. *Regulatory Requirements.*

Spent fuel assemblies shall be packaged and placed in casks so that all applicable regulatory requirements are met.

C. Summary of Fuel Classifications

1. *Standard Fuel:*

- a. Class S-1: PWR
- b. Class S-2: BWR

2. *Nonstandard Fuel:*

- a. Class NS-1: Physical Dimensions
- b. Class NS-2: Non Fuel Components
- c. Class NS-3: Short Cooled
- d. Class NS-4: Non-LWR
- e. Class NS-5: Consolidated Fuel Rods.

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3. *Failed Fuel:*

- a. Class F-1: Visual Failure or Damage
- b. Class F-2: Radioactive "Leakage"
- c. Class F-3: Encapsulated

D. High-level Radioactive Waste

The DOE shall accept high-level radioactive waste. Detailed acceptance criteria and general specifications for such waste will be issued by the DOE no later than the date on which DOE submits its license application to the Nuclear Regulatory Commission for the first disposal facility.

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APPENDIX F

Detailed Description of Purchaser's Fuel

This information shall be provided by Purchaser for each distinct fuel type within a Shipping Lot not later than sixty (60) days prior to the schedule transportation date.

Purchaser

Contract Number/Date - - / - - - -

Reactor/Facility Name -

I. Drawings included in generic dossier: - - - -

1. Fuel Assembly DWG # - -

2. Upper & Lower end fittings DWG # - -

Dossier Number: - -

DOE Shipping Lot # - -

Assemblies Described:

--- BWR

--- PWR

--- Other

II. *Design Material Descriptions.*

Fuel Element:

1. Element type - - (rod, plate, etc.)

2. Total length - - / (in.)

3. Active length - - (in.)

4. Cladding material - - (Zr, s.s., etc.)

Assembly Description:

1. Number of Elements - -

2. Overall dimensions (length - - (cross section) - - (in.)

3. Overall weight - -

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III. Describe any distortions, cladding damage or other damage to the spent fuel, or nonfuel components within this Shipping Lot which will require special handling procedures. (Attach additional pages if needed.)

IV. Assembly Number - -

Shipping Lot # - -

	Irradiation History Cycle No.				
	1	2	3	4	5
Startup Date (mo/day/yr)					
Shutdown Date(mo/day/yr)					
Cumulative fuel exposure (Mwd/Mtu)					
Average Reactor Power (Mwth)					
Total heat output/assembly in watts using an approved calculational method: _____ as of Date _____					

Any false, fictitious or fraudulent statement may be punishable by fine or imprisonment (U.S. Code, Title 18, Section 1001).

By Purchaser:

Signature

Title

Date

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**FORM NWPA-830G
U.S. DEPARTMENT OF ENERGY**

Appendix G – Standard Remittance Advice for Payments of Fees

1.0 IDENTIFICATION INFORMATION

1.1 Purchaser Information

(b) Address
(c) City, State & Zip Code
1.2 Contact Person

(a) Name
(b) Phone No
(c) Fax
(d) E-mail:

1.3 Standard Contract Identification Number:

(a) Name:

1.4 Period Covered by this Remittance Advice (MM/DD/YYYY)

(a) From: To:
(b) Date of this Payment:

2.0 SPENT NUCLEAR FUEL (SNF) FEE

2.1 Number of Reactors Covered:
2.2 Total Purchaser Obligation as of April 7, 1983: \$

2.6 Option Chosen:
2.7 Fee Data

2.3 Date of First Payment:
2.4 10-Year Treasury Note Rate as of the Date of
First Payment: -----> %
2.5 Unpaid Balance Prior to this Payment: \$

(a) Principal:
(b) Interest:
(c) Total Spent Nuclear Fuel Fee Transmitted with
this Payment: \$

3.0 FEE FOR ELECTRICITY GENERATED AND SOLD (MILLS PER KILOWATT HOUR, M/kWh)

3.1 Number of Reactors Covered:
3.2 Total Electricity Generated and Sold (Megawatt hours):

3.4 Total Fee for Electricity Generated and Sold (M/kWh)
Transmitted with this Payment: \$

3.3 Current Fee Rate: (M/kWh)

4.0 UNDERPAYMENT/LATE PAYMENT (As Notified by DOE)

Type of Payment (a)	Date of Notification (MM/DD/YYYY) (b)	DOE Invoice Number (c)	Date of Payment Transmittal (MM/DD/YYYY) (d)	Interest Paid (e)	Amount Transmitted (f)
4.1 SNF Underpayment:					
4.2 Electricity Generated Underpayment:					
4.3 TOTAL UNDERPAYMENT					
4.4 SNF Late Payment					
4.5 Electricity Generated Late Payment:					
4.6 TOTAL LATE PAYMENT:					

5.0 OTHER CREDITS CLAIMED (Attached Explanation)

Enter the Total Amount Claimed for All Credits \$

6.0 TOTAL REMITTANCE

6.1 Total Spent Nuclear Fuel Fee Transmitted (from 2.7(c)): \$
6.2 Total Fee for Electricity Generated and Sold (from 3.4): \$
6.3 Total Underpayment (from 4.3 (f)): \$
6.4 Total Late Payment (from 4.6(1)): \$
6.5 Total Credits (from 5.0): \$
6.6 TOTAL REMITTANCE (Sum of 6.1 through 6.4 minus 6.5): \$

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7.0 CERTIFICATION

I certify that the Total Remittance is true and accurate to the best of my knowledge.

Name:

Date:

Signature:

Title 18 USC 1001 makes it a crime for any person to knowingly and willfully make to any department or agency of the United States any false, fictitious, or fraudulent statements as to any matter within its jurisdiction.

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ANNEX B TO APPENDIX G

Standard Remittance of Advice (RA) for Payment of Fees

This Annex should be completed only for SNF burned before midnight between April 6/7, 1983.

I. Identification

A. Purchaser: - - - - -

B. Unit identification (Only one unit may be covered in each report.)

1. Reactor/Facility Name:

2. Location:

3. Type:

4. Capacity:

5. Date of Commencement of Operations:

6. NRC License No.:

II. Fee Calculation

A. Discharged nuclear fuel

1. Burnup' (MWDT/MTU)	0-5,000	5,000-10,000	10,000-20,000	20,000 up
2. Initial Loading (KgU) (with indicated burnup)				
3. Fee Rate (\$/KgU)	80.00	142.00	162.00	184.00
4. Fee (\$)				
5. Total fee (\$)				

DAY

B. Nuclear fuel in the reactor core as of midnight of 6/7 April 1983.

	Assembly Identification	Initial Loading (KgU)	Burnup ¹ as of midnight 6/7 April 1983 (MWDT/MTU)	Fee
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				

C. Total fee.

(Approved by the Office of Management and Budget under control number 1091-0260)

¹ Please provide (as an attachment) a clear reference to the methodology used to derive the burnup figures (computer codes, etc.) and a clear reference to all data used in the derivation of those figures.