

SUPPORTING STATEMENT

Nuclear Fuel Data Survey
(Form GC-859)
OMB No. 1901-0287

This request is for the Office of Management and Budget (OMB) approval of a proposed reinstatement and three-year approval to the Form GC-859, "Nuclear Fuel Data Survey" (previously designated as the Form RW-859, "Nuclear Fuel Data Survey"). The Energy Information Administration (EIA) is developing this form for submission to the OMB pursuant to the Paperwork Reduction Act of 1995. The Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101 *et seq.*) required that the Department of Energy (DOE) enter into Standard Contracts with all generators or owners of spent nuclear fuel and high-level radioactive waste of domestic origin. This data collection evolved from an Appendix to this Standard Contract. Appendix B to the Standard Contract required that spent nuclear fuel discharge, storage, and projection data be collected annually. Appendix B to the Standard Contract, originally titled "Ten Year Discharge Forecast," became the Form RW-859 "Nuclear Fuel Data Survey." The Form RW-859 survey was collected annually for the survey years from 1983 through 1995. It was again collected for survey years 1998 and 2002, covering multi-year periods. The Form RW-859 was last collected in 2003 and was discontinued on November 10, 2009. The survey containing data as of December 31, 2002 was the last collected and is the most recent data on spent nuclear fuel discharges and storage available within DOE. The EIA had collected the Form RW-859 survey for the DOE Office of Civilian Radioactive Waste Management (OCRWM). In 2009, the Obama Administration determined that all funding for OCRWM be eliminated from the Federal budget, leading to the dissolution of the OCRWM. Many of the activities previously performed by the OCRWM had to continue in lieu of these political developments. Activities were transferred to the Office of Standard Contract Management, which was created within the Office of the General Counsel (GC). Thus, the form number was changed from the Form RW-859 to the Form GC-859.

The information collection proposed in this supporting statement has been reviewed in light of applicable information quality guidelines. It has been determined that the information will be collected, maintained, and used in a manner consistent with OMB, the DOE and EIA information quality guidelines.

The Form RW-859 Nuclear Fuel Data Survey form had been used to collect information on nuclear fuel use and spent fuel discharges from all utilities that operate commercial nuclear reactors and from all others that possess irradiated fuel from commercial nuclear reactors. The data collection provided stakeholders with detailed information concerning the spent nuclear fuel generated by the respondents (commercial utility generators of spent nuclear fuel and other owners of spent nuclear fuel within the U.S.). The new Form GC-859 will represent a change from previous versions of the Nuclear Fuel Data Survey. Recommendations developed by the president's Blue Ribbon Commission (BRC) on America's Nuclear Energy Future have resulted in a need for certain data in addition to data collected in previous surveys in order that personnel from the DOE Offices of Nuclear Energy (NE) and Environmental Management (EM), the national laboratories, and other data users can meet their research obligations.

The version of the survey form used in the 2002 survey was redesigned in calendar years 2005 and 2006. In response to comments and suggestions received from survey respondents the structure of the survey form was modified. This change plus other specific changes recommended by the user

community were presented to and approved by the OCRWM. This redesigned version of the survey form was granted clearance by the OMB, making it the most recent approved Nuclear Fuel Data survey implement. The 2006 redesigned form was used as the baseline document in the development of the new Form GC-859 survey.

The current Form GC-859 redesign effort and associated changes has several fundamental goals and objectives:

- Maintain the fidelity of collection of the information required by stakeholders, by continuing to collect quality data on reactors, historical spent fuel discharges, projections of spent fuel discharges, pool capacities and inventories, and special fuel and non-fuel forms relevant to user needs;
- Simplify the process of data collection and validation, by enhancing the ability of respondents to provide data through electronic data transfer in any available format (spreadsheet, database, etc.);
- Collect additional data required by the DOE

The major changes to the Form GC-859 survey from the last data collection in 2003 include the following:

- The EIA has modified the structure of the Form GC-859 survey into separate schedules for the collection of utility, reactor, fuel, storage facility, non-fuel, and greater than class C (GTCC) low-level radioactive waste data. The redesign increases the visibility of storage facilities as individual entities, clarifies the collection of data on special fuel forms and non-fuel components, updates historical cycle assembly data, and collects data on GTCC low-level waste.
- Instructions for responding to each schedule of the survey form, along with appropriate references and definitions, have been moved into the schedules. Instructions were previously detailed in an Appendix to the survey form. Appropriate data from the Standard Contract has also been included within the form schedules. Drop-down menus have been added throughout the form to aid the respondents. The Glossary has been revised and expanded. Respondents to this data collection are provided with data submitted on previous Nuclear Fuel Data surveys so that they may update historical data. The new form allows for multiple contact personnel, so that respondents may choose to submit reactor and storage facility data separately.
- The consolidation of all fuel data (metal content, enrichment, discharge burnup, cycle numbers and dates, fuel vendor, lattice type, assembly status code, storage location, special fuel forms) in a single survey schedule ensures consistent, non-repetitive data. Data on special fuel forms (consolidated fuel, fuel in canisters, fuel rods, fuel pieces) now supplements the basic fuel data, rather than being collected in separate sections as in previous surveys. A major change to the spent fuel data is that respondents are no longer required to report assembly type codes for every discharged assembly. Previous surveys contained an Appendix of almost 300 different assembly codes from which the respondent had to choose, based on assembly manufacturer, design considerations, and characteristics. Respondents are now required to only report manufacturer and lattice (array) type, greatly reducing the time required to fill out this section.
- The fuel section now includes a requirement to collect complete fuel cycle history for every

discharged assembly. Previously collected fuel data included fresh fuel assembly insertions and spent fuel discharges, so much of this historical data is already available and will be provided to the respondents upon request.

- Data collection for pool storage and dry storage has been combined from two sections on previous surveys. Previous requirements to supply information on individual assemblies stored at all storage sites has been replaced by the addition of a column for storage site identifier in the fuel data section. A new requirement to report assemblies in multi-canister dry storage modules has been added.
- Non-fuel components data collection has been moved to a separate schedule. Data will now be collected by storage location: components that are an integral part of an assembly, components stored in a single-element canister or container, and components stored separate from an assembly and uncanistered in the storage pool. Data on non-fuel components integral to an assembly are being collected for the first time.
- Another new addition to the Form GC-859 is a schedule for greater than class C (GTCC) low level radioactive waste (LLRW). This schedule will collect both packaged and projected inventory information for activated metals and process waste.
- Approximately 20 questions, tables, or sections have been deleted from this version of the form. Data on reinserted fuel, canister closure, and shipments and transfers of discharged fuel have been removed in the new version of the survey. The revised form eliminates the collection of duplicative information.

A. Justification

1. Legal Authority

The authority for this mandatory data collection is provided by the following provisions:

- a. Section 13(b), 15 U.S.C. §772(b), of the Federal Energy Administration Act of 1974 (FEA Act), Public Law 93-275, which states:

"All persons owning or operating facilities or business premises who are engaged in any phase of energy supply or major energy consumption shall make available to the [Secretary] such information and periodic reports, records, documents, and other data relating to the purposes of this Act, including full identification of all data and projections as to source, time, and methodology of development, as the [Secretary] may prescribe by regulation or order as necessary or appropriate for the proper exercise of functions under this Act."

- b. Section 5(b), 15 U.S.C. §764(b), of the FEA Act states that to the extent authorized by Section 5(a), the [Secretary] shall:

"(2) assess the adequacy of energy resources to meet demands in the immediate and longer range future for all sectors of the economy and for the

general public;...

(9) collect, evaluate, assemble, and analyze energy information on reserves, production, demand, and related economic data;...

(12) perform such other functions as may be prescribed by law."

- c. As the authority for invoking Section 5(b) above, Section 5(a), 15 U.S.C. §764(a), of the FEA Act in turn states:

"Subject to the provisions and procedures set forth in this Act, the [Secretary] shall be responsible for such actions as are taken to assure that adequate provision is made to meet the energy needs of the Nation. To that end, he shall make such plans and direct and conduct such programs related to the production, conservation, use, control, distribution, rationing, and allocation of all forms of energy as are appropriate in connection with only those authorities or functions:

(1) specifically transferred to or vested in him by or pursuant to this Act;...

(3) otherwise specifically vested in the [Secretary] by the Congress."

- d. Authority for invoking Section 5(a) of the FEA Act is provided by Section 52 of the FEA Act, 15 U.S.C. §790a, and the Nuclear Waste Policy Act of 1982, 42 U.S.C. §10101 et seq. Each of these laws defines types of data (directly or implicitly) which will be collected on the proposed form.

(1) Section 52 of the FEA Act, 15 U.S.C. §790a, states that it is the duty of the [Secretary] to:

"...establish a National Energy Information System (hereinafter,...the System) [which] shall...contain such information as is required to provide a description of energy supply and consumption...

(b)...the System shall contain such energy information as is necessary to carry out the Department's statistical and forecasting activities and shall include,...such energy information as is required to define and permit analysis of--

(1) the institutional structure of the energy supply system including patterns of ownership and control of mineral fuel and nonmineral energy resources and the production, distribution, and marketing of mineral fuels and electricity;

(2) the consumption of mineral fuels, nonmineral energy resources, and electricity by such classes, sectors, and regions as may be appropriate for the purposes of this Act;...

- (5) industrial, labor, and regional impacts of changes and patterns of energy supply and consumption."

Authority for the specific collection of nuclear fuel data comes from the Nuclear Waste Policy Act (NWPA) of 1982, as amended, 42 U.S.C. §10101 et seq., (Public Law 97-425). Section 302 (a) states:

- a. CONTRACTS (1)...“The Secretary is authorized to enter into contracts with any person who generates or holds title to high-level radioactive waste, or spent nuclear fuel, of domestic origin for the acceptance of title, subsequent transportation, and disposal of such waste or spent fuel.”

The full Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste, 10 CFR Part 961, can be viewed at:

http://energy.gov/sites/prod/files/gcprod/documents/New_Standard_Contract.pdf

Subpart B, Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste, Part 961.11, Article IV, Responsibility of the Parties, states:

- 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 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 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.”

2. Uses of the Data

The Form GC-859, “Nuclear Fuel Data” survey collects reactor license information, reactor cycle data, data on permanently discharged fuel, historical assembly cycle data, special fuel forms, data on canisters and their contents, pool and dry storage capacities and inventories, nonfuel components data, and data on Greater Than Class C (GTCC) Low-Level Radioactive Waste (LLRW). The data are collected from owners of commercial nuclear reactors, including operating reactors, shutdown reactors, and those under construction, and from all other owners of spent nuclear fuel. The information obtained by the Form GC-859 is the original data upon which the Office of Standard Contract Management activities are based. A key requirement for

the success of this program is an information system with detailed data on the quantity of radioactive waste material currently in storage at commercial nuclear facilities and the amount of additional waste likely to be produced over the operating lives of existing and planned nuclear reactors. The NWPA requires that the Secretary develop and implement programs to dispose of spent nuclear fuel. This information is necessary to understand and explore the specific requirements of developing and conducting these programs, and thereby, to effectuate the purposes of the NWPA.

The detailed data collected on Form GC-859 are directly useful for assessing spent fuel storage requirements. The data can also constitute inputs to a number of nuclear fuel data bases maintained by the DOE National Laboratories. For example, discharge dates, assembly types, burnups, and initial enrichments are used by analysts to calculate the gamma, neutron, other radiation, and heat intensities for shielding design and thermal design of facilities and equipment, as well as the isotopic inventories of the fuel to be emplaced in a future repository. The quantities and dimensions of nuclear fuel are used to size the facilities and equipment. Trends based on historical spent nuclear fuel data provided by the respondents are used by the DOE to estimate future discharges from U.S. commercial nuclear reactors and their characteristics. The projected need for additional spent fuel storage capacity is based on these estimated cumulative discharges, and on the estimated maximum storage capacity of both at-reactor and away-from-reactor storage facilities.

The new Form GC-859 represents a change from previous versions of the Nuclear Fuel Data survey. Recommendations developed by the president's Blue Ribbon Commission (BRC) on America's Nuclear Future have resulted in a need for additional data along with the data collected in previous surveys in order that personnel from the DOE Offices of Nuclear Energy (NE) and Environmental Management (EM), and the national laboratories can meet their research obligations. A requirement to develop an Environmental Impact Statement (EIS) for the disposal of Greater Than Class C (GTCC) Low-Level Waste (LLW) has resulted in a new survey schedule to collect this data.

3. Use of Technology

The EIA continues to use information technology to improve reporting options. The predecessor survey to the Form GC-859 survey, the Form RW-859 survey, was the first survey within EIA to use an automated software package for filing survey data. Current plans call for the survey to be a self-contained system to be sent to respondents on a DVD. No additional software is required to run the system. Though the system is being developed in Microsoft Access, it is being designed to incorporate many of the features of Microsoft Excel, to aid in the loading of data from respondent data files into the survey system. The EIA is also investigating the incorporation of the Form GC-859 system into the electronic EIA e-filing system.

The collection of data for the Form GC-859 will involve an update of previously reported data. Respondents will be provided with a DVD containing their most recently reported data, data as of December 31, 2002. Respondents will then be responsible for verifying and certifying the previously reported data, and updating data elements as appropriate using their subsequent reporting period data. Respondents may submit data in any readily available format (data base files, spreadsheets, etc.) in lieu of filling out certain sections of the survey form. This option

greatly reduces respondent burden in filling out the large amounts of data required on the discharged assemblies, historical cycles, and canisters data section of the form. A reports option in the Form GC-859 software will permit respondents to print a hardcopy of the form or individual sections of the form.

4. Efforts to Identify Data Duplication

Within the DOE, there is no data collection similar to the Form GC-859. As part of a continuing effort to avoid duplication, the EIA routinely reviews and evaluates information from a variety of sources, including other Federal agencies, industry trade associations, State governments, and commercial information services to identify instances of duplication. The form has been redesigned to eliminate duplicate reporting of information and to eliminate data elements that have been shown not to be required by the government.

The EIA has evaluated all known sources of data relating to nuclear waste and have found no other sources capable of providing the detailed data needed by this Federal government program. We have determined that other sources cannot replace or approximate the information provided because of differences in classification, inconsistency, incompleteness, infrequency, unavailability, or lack of coverage. For example, the NRC's Form 741 and Form 742 data do not maintain a connection to individual assembly identification number and do not collect fuel burnup data.

5. Provisions for Reducing Burden on Small Businesses

This collection of information does not involve small businesses or other small entities. All respondents are either major commercial utilities or operating companies.

6. Consequences of Less Frequent Reporting

The Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste required that owners and operators of commercial nuclear power plants report certain data annually to the DOE. The predecessor form to the Form GC-859 was collected annually for the survey years 1983 through 1995. The DOE subsequently determined that new data was needed only every three or four years and went to this less frequent reporting schedule. Due to budgetary constraints, the most recent data collected was as of December 31, 2002, thus making the nuclear fuel data 10 years old. Recent needs have arisen requiring the data to again be collected.

The implementation of less frequent reporting reduced respondent burden somewhat by permitting all new data for the multiyear period to be reported at one time. The current proposed collection will require the verification of previously submitted data and the inclusion of ten years of updated data. Following this current survey, it is expected that the new Form GC-859 will be collected once every five years.

7. Compliance with 5 C.F.R. 1320.5

The data are being collected in accordance with all guidelines set forth in 5 C.F.R. 1320.5.

8. Consultation Outside the Agency

A Federal Register Notice, (77 FR 430767) was published July 23, 2012, giving the public an opportunity to comment on the proposed reinstatement of the Form GC-859, "Nuclear Fuel Data" survey. Written comments regarding this Notice were required within 60 days. Comments were received from three organizations: the Nuclear Energy Institute, representing the utilities and fuel manufacturers who would be reporting on or compiling data for the survey; a group representing three New England reactors, Maine Yankee, Connecticut Yankee, and Yankee Rowe; and a contractor at Oak Ridge National Laboratory. The comments received provided useful inputs to the final survey design. The DOE responded to each of the comments received. A summary of the comments and the DOE response to each is provided as an attachment to this statement.

A series of Working Group Meetings were held throughout the form design process among the current contractors; staff from DOE Offices including the Energy Information Administration (EIA), the Offices of the General Counsel (GC), Nuclear Energy (NE), and Environmental Management (EM), the DOE national laboratories, the Nuclear Energy Institute (NEI), the Electric Power Research Institute (EPRI), utility staff representing approximately 70% of the form respondents, lawyers representing NEI and the utilities, representatives from the three major fuel vendors and manufacturers, and other interested parties. Series of draft and revised mockups of a proposed redesigned GC-859 survey form were developed for use in these meetings. All issues regarding the content of the survey form were resolved during these meetings and subsequent dialog.

9. Payments or Gifts to Respondents

There are no provisions for payments to respondents.

10. Provisions Regarding Disclosure of Information

The information is collected under the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste. In accordance with the terms of that contract, companies are allowed to mark any data supplied under the contract as "proprietary data". See 10 C.F.R. 961.11, Article XXI - Rights in Technical Data. Although a large part of the information furnished is publicly available, this information is not typically published by the Department of Energy. If a request for the information is received, to the extent that information is not in the public domain or has been marked as "proprietary data," the procedures listed below will be followed.

The information reported on Form GC-859 will be protected and not disclosed to the public to the extent that it satisfies the criteria for exemption under the Freedom of Information Act (FOIA), 5 U.S.C. §552, the Department of Energy (DOE) regulations, 10 C.F.R. §1004.11, implementing the FOIA, and the Trade Secrets Act, 18 U.S.C. §1905.

The Federal Energy Administration Act requires the EIA to provide company-specific data to other Federal agencies when requested for official use. The information reported on this form may also be made available, upon request, to another DOE component; to any Committee of

Congress, the Government Accountability Office, or other Federal agencies authorized by law to receive such information. A court of competent jurisdiction may obtain this information in response to an order. The information may be used for any non-statistical purposes such as administrative, regulatory, law enforcement, or adjudicatory purposes.

EIA has an agreement to provide company-specific information to the DOE Office of Standard Contract Management, within the Office of the General Counsel. The data are used for administrative, regulatory, and adjudicatory purposes only. Disclosure limitation procedures are not applied to the statistical data derived from this survey’s information. The agreement requires that the information is protected and not disclosed to the public as set forth above.

11. Questions of a Sensitive Nature

There are no questions of a sensitive nature in these data collections.

12. Estimate of Respondent Burden

Current plans call for the survey to be collected once every five years, so respondents will only file the Form GC-859 once over the three-year approval period, for an average of 1/3 of a response per year from each respondent. For the three-year approval period, the annual estimate is 46 responses. The estimated number of annual burden hours of 3106.7 per year is obtained by multiplying the burden per response for each category by the corresponding number of annual responses and adding the burden estimates for each category.

Form GC-859, “Nuclear Fuel Data Survey”				
Respondent Category	Total Respondents	Hours / Response	Total Hours	Annual Responses
Operating Nuclear Reactors	104	80	8320	34.67
Permanently Shut Down Nuclear Reactors	16	40	640	5.33
Storage Facilities	8	20	160	2.67
Research/Test Reactors	10	20	200	3.33
Total	138		9320	46
Respondents other than operating nuclear reactors are only required to respond to the sections of the survey applicable to them				
Total Annual Burden Hours				3106.7

The total annual cost burden, assuming one data collection in the three-year clearance period, is estimated to be \$210,447.85. (\$67.74/hour x 3,106.7 hours). An average cost per hour of \$67.74 is used because that is the average loaded (salary plus benefits) cost for an EIA employee assigned to data survey work. EIA assumes that the survey respondent workforce completing surveys for EIA is comparable with the EIA workforce.

13. Annual Reporting and Record Keeping Cost

There are no additional capital, start-up, or operating and maintenance costs to respondents beyond the cost of the hours described in Item 12. The only costs are for the burden hours required to report on the Form GC-859.

14. Annualized Cost to the Federal Government

The estimated annual cost to the Federal Government for the Form GC-859 data collection is shown below. The figures below are developed on the assumption that the Form GC-859 data will be collected only once during the OMB approval period.

The estimated cost to the Federal Government for the Form GC-859, is \$727,720. This includes the cost of 30% time of one EIA employee at \$141,911 per year for three years and a total of \$600,000 in contractor costs. This represents an annual cost for the three-year clearance period of \$242,573.3 per year. The cost figures include (1) Development and Maintenance Costs, (2) Collection Costs, (3) Processing Costs, (4) Analysis Costs, (5) Publication Costs, and (6) Other Costs.

	Type of Cost	Year 1	Year 2	Year 3	Total	Annual Cost
1	Development and Maintenance Costs	\$224,570	\$48,000	\$0	\$272,570	\$90,857
2	Collection Costs	\$3,000	\$9,000	\$4,000	\$16,000	\$5,333
3	Processing Costs	\$4,000	\$160,570	\$17,000	\$181,570	\$60,523
4	Analysis Costs	\$5,000	\$111,000	\$106,570	\$222,570	\$74,190
5	Publication Costs	\$0	\$10,000	\$10,000	\$20,000	\$6,667
6	Other Costs	\$5,000	\$5,000	\$5,000	\$15,000	\$5,000

Totals	\$241,570	\$343,570	\$142,570	\$727,710	\$242,570
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15. Changes in Respondent Burden

Since the “Nuclear Fuel Data” survey is being collected for the first time in ten years, an increase in respondent burden is expected. Historically, the burden for completing the survey has varied from 1,000 to 5,000 hours per year, based on the time between data collections and the specific data being collected. The annual burden for the last survey collected, covering a four-year period, was approximately 1,250 hours per year. The increase for this proposed collection can be attributed to the inclusion of historical cycle-by-cycle data for the first time since 1995, the collection of detailed data on canisters and their contents and on nonfuel components, the inclusion of new data on Greater Than Class C (GTCC) Low-Level Waste (LLW), and a slight increase in the number of respondents to include storage-only facilities and research/test reactors.

16. Schedule for Information Collection and Publication

The current schedule for the collection and processing of the Form GC-859 survey is as follows:

Survey files for mail out	5/15/2013
Surveys due back at DOE	12/31/2013
Draft Form GC-859 Database	1/30/2014
Revised Form GC-859 Database	4/30/2014
Final Form GC-859 Database	7/31/2014

17. Expiration Date

The expiration date and OMB control number will be displayed on the forms.

18. Certification Statement

There are no exceptions to the Certification Statement.