



October 5, 2022

Mr. David Cullison  
Office of the Chief Information Officer  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Docket ID NRC-2021-0043, Information Collection: NRC Forms 540 and 540A, Uniform Low-Level Radioactive Waste Manifest (Shipping Paper) and Continuation Page, Comments from DW James Consulting, LLC.

Dear Mr. Cullison,

Thank you for the opportunity to comment and provide information regarding the NRC's Uniform Waste Manifest. DW James Consulting (DWJC) provides services and software to the nuclear industry. Our products include software to facilitate the creation of shipping papers for Low Level Radioactive Waste (LLRW) disposal and transport to processing companies. It is advantageous for DWJC and the nuclear industry in general to have a consistent format for presentation of important data. This minimizes the opportunity for data entry mistakes and makes quality control reviews easier. NRC is the only regulating authority that promotes this level of consistency for LLRW data. While Agreement States and disposal site operators can and do require additional site-specific data, they typically follow the basic format of the Uniform Manifest.

In response to the specific questions identified in the request, we offer the following:

1. Is the proposed collection of information necessary for the NRC to properly perform its functions? Does the information have practical utility? Please explain your answer.

Forms 540 and 540A are intended to serve as shipping papers as required by 49 CFR Part 172. Data collected on this form that is important to NRC include the name of the generator or processor making the shipment as well as the disposal site or processor receiving the shipment. This information seems to be necessary for NRC to confirm compliance with 10 CFR Part 20, 10 CFR Part 37, 10CFR Part 61 and 10 CFR Part 71. NRC also uses this information to evaluate safety significance and make risk-informed decisions regarding public protection. Not collecting and analyzing this data, and making sure it is accurate, will adversely affect NRC's responsibility in this area.

2. Is the estimate of the number of annual responses, the number of annual respondents, and the burden of the information collection accurate? Please explain your answer.

DWJC does not have sufficient data to evaluate the accuracy of the number of annual respondents or the number of annual responses. The stated values appear reasonable.

The burden of the information collection appear to work out to approximately 45 minutes per manifest. This may be appropriate for non-utility licensees with simple shipments. The burden on utilities is likely more significant. While software helps utilities prepare shipping papers in a matter of minutes, the review and approval cycle for most utility shipments is considerably longer. This is especially true when the shipment



consists of Type B quantities of radioactive material. DWJC does not have sufficient data to develop an estimate of this burden.

3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?

The quality of the data collected on Forms 541 and 541A is dependent on the licensee's program for waste characterization and classification. Software programs can facilitate the process but the results are only as good as the input data and the assumptions made during the analysis. NRC Inspection Procedure 71124 contains general guidance for evaluation of the characterization and classification programs used by licensees. A significant level of expertise is required to accurately evaluate a complicated waste process such as is found at a nuclear utility. Enhancing the quality and clarity of the data presented on Forms 540 and 540A can be accomplished by training NRC inspectors to the required level of expertise and or revising the inspection procedures to provide critical details describing how to more effectively evaluate the licensee's program. Nuclear industry groups such as the Electric Power Research Institute (EPRI) and the American Society of Mechanical Engineers (ASME) have spent decades researching and evaluating LLRW characterization methods which could be a resource for NRC to make improvements. For example:

The methodology most commonly used by licensees in the U.S. to create the data reported on the 541 and 541A is over 30 years old. While approved by NRC in 1985, the methodology is inconsistent with methods intended in NRC's Branch Technical Position on Waste Classification and is technically flawed specifically affecting compliance with 10 CFR Part 20. NRC recognized these deficiencies in the Topical Report approval for the methodology specifically with respect to the development of scaling factors for hard-to-detect (HTD) radionuclides. However, inspection and enforcement activities at NRC licensees have failed to encourage more robust and scientifically sound techniques. The Electric Power Research Institute (EPRI) has conducted several studies on the measurement of HTD radionuclides included in 10 CFR Part 61 for waste classification. These studies have demonstrated statistical methods of evaluating the analytical data and calculating scaling factors to more easily detected gamma emitting radionuclides. These methodologies are consistent with data quality objectives process (DQO) as described by the Environmental Protection Agency (EPA), NRC and the International Atomic Energy Agency (IAEA) guidance documents. Use of advanced methodologies would result in a significant improvement in the accuracy of the data reported on Form 541 and 541A.

4. How can the burden of the information collection on respondents be minimized, including the use of automated collection techniques or other forms of information technology?

Most of the LLRW disposal sites in the United States make use of electronic data transfer methods to collect the information that is on Forms 540 and 540A. Most waste manifesting software packages have this capability as well. NRC and DOE should utilize



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this type of data transfer for the collection of LLRW data rather than using forms printed on paper.

DWJC has no comments or additions to the Draft OMB Supporting Statement for NRC Forms 540 and 540A Uniform Low-Level Radioactive Waste Manifest. The Statement is clear and complete.

Again, thank you for the opportunity to comment. Please feel free to contact me if you have any questions or wish to discuss our comments.

Sincerely,

Thomas M. Kalinowski

President – DW James Consulting, LLC