



EFCOG Waste Management Working Group

August 28, 2013

Ms. Christine Gelles, Associate Deputy Assistant Secretary
Waste Management, EM-30
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

SUBJECT: DOT Return to Service versus DOE 10 CFR 835 Release Limits

Dear Christine,

Attached is the Energy Facility Contractor Group (EFCOG) Waste Management Working Group's report of the results from our evaluation of recent incidents involving the receipt of contaminated commercial carrier vehicles and reusable waste packages (e.g., intermodal containers [IMs]) that have resulted in the retention of commercial motor carrier equipment (e.g., trailers, IMs) for the purpose of achieving the Department of Energy (DOE) release levels specified in 10 CFR 835, Appendix D, *Occupational Radiation Protection - Surface Radioactivity Values*.

This evaluation was conducted in cooperation and communication with another EFCOG team evaluation involving the recent trailer contamination and supersack integrity issues related to shipments of low-level and mixed radioactive wastes from DOE sites for disposal. The report of that evaluation, with resulting recommendations, was transmitted to you on October 4, 2012.

The DOE versus DOT Limits Team was formed under the leadership of Mike Waters, CH2M Hill Plateau Remediation Company (CHPRC), and Jim Portsmouth, CH2M Hill. The Team is made up of individuals from many of the DOE sites Complex-wide and contains representatives from the NNSS (NSTec), Idaho (CH2MHill/Washington Group) Los Alamos National Laboratory (LANL), The Portsmouth Gaseous Diffusion Plant (Fluor-B&W), EnergySolutions (ES) Clive and Bear Creek facilities, as well as NNSA Office of Packaging and Transportation, (NA-00-40), DOE Office of Worker Safety and Health (HSS-11), and DOE Office of Packaging and Transportation (EM-33); the sponsor of this evaluation. The Team is comprised of professionals from the transportation management, hazardous materials, radioactive waste management, waste shipping and RadCon subject matter experts (SME's) as well as representatives from the EFCOG Radiation Protection Subgroup and the ISM&QA Working Group.

The EFCOG Packaging and Transportation (P&T) Subgroup of the Waste Management Working Group was asked by the DOE Headquarters (HQ) Office of Packaging and Transportation (EM-33) to assist them with identifying and resolving issues regarding the appropriate requirements for the release of empty (unloaded) commercial carrier owned

trailers which had previously transported radioactive waste to the Nevada National Security Site (NNSS) for disposal. Upon delivery by a commercial motor carrier of truckload quantities of low-level radioactive waste, the empty trailers were surveyed prior to release by NNSS RadCon personnel. In some cases, removable radioactive contamination levels were detected which were low enough for return to service by the Department of Transportation (DOT) limits, as promulgated by 49 CFR 173.443 (*Transportation – Shippers – General Requirements for Shipments and Packagings – Contamination Control*), but were above the DOE release limits specified in 10 CFR 835, Appendix D. The latter limits are incorporated into the current NNSS Waste Acceptance Criteria.

Another example of this problem was discovered during the Team's evaluation. Brookhaven National Laboratory (BNL) recently decided that decontamination efforts to meet DOE 10 CFR 835 limits would be more expensive than allowing shipments of waste to leave the site under the return to service limits prescribed by DOT, and BNL chose to divert these shipments to EnergySolutions Clive instead of shipping them to NNSS for disposal.

As a result of this evaluation, the Team found that DOE and DOT return to service requirements were not being interpreted or implemented at the DOE sites around the complex in a consistent manner. A survey of DOE sites around the complex found that implementation of these requirements appeared inconsistent and the requirements themselves seemed to be inconsistent as well.

The application of the DOE release limits in 10 CFR 835 has increased costs to DOE waste generators in the form of required decontamination costs for the commercial carrier transport equipment, as well as the daily demurrage costs for the trailers. The motor carrier may be able to charge the DOE waste generating site for "out-of-service" time due to the resulting delay in releasing the equipment back into commerce, as well as for business schedule impacts due to non-availability of equipment and costs to replace flooring removed during decontamination. Depending on the type of carrier equipment being held, demurrage costs alone can be very expensive until the equipment is decontaminated and released from the DOE site and available for interstate commerce loading.

Additionally, the delay in returning the motor carrier's empty trailers in a timely manner can result in a loss of goodwill with the carrier, as the motor carrier is prevented from using their equipment for other transport jobs. This results in increased cost for the carrier to replace the needed equipment that had been previously scheduled for other transport movements, either by leasing replacement equipment or in "opportunity costs" as they have to turn down other jobs since they do not have enough available equipment (e.g., trailers) to dedicate to other jobs.

As an illustration of the inconstant application of the regulations, there is an exclusion to the DOE regulations in 10 CFR 835.1 (b) that allows the DOT regulations to be used in place of the DOE 10 CFR 835 limits if the radioactive material transportation is not being performed by the DOE or a DOE contractor. This provision also excludes certain types of radioactive material transportation from all of the provisions of 10 CFR 835 if the radioactive materials are being transported by a commercial motor vehicle operated by a private or commercial motor carrier and not a DOE or DOE contractor operated vehicle.

Some DOE sites are implementing this exclusion, and some are not. Consistent implementation of the exclusion across the DOE complex, along with establishing appropriate radiological survey protocols and techniques, could prevent or at least minimize future impacts due to the differences between the regulatory free-release limits.

As part of the Team's evaluation, a concerted effort was made to review any other pertinent regulations or requirements concerning the transportation of radioactive wastes or materials. In doing this evaluation, the Team found other examples of the apparent inconsistency/conflict between DOE Orders/requirements. During the review, it became apparent that an additional set of release limits from DOE Order 458.1, *Radiation Protection of the Public and the Environment*, should be considered as well. Also DOE O 460.2A, *Departmental Materials Transportation and Packaging Management*, contains "conflicting" release limits guidance.

The Team would like to provide the following overarching comments based on its evaluations conducted during this review. The Team found that DOE release and DOT return to service requirements were not being interpreted or implemented at the DOE sites around the complex in a consistent manner. The Team believes that DOE-HQ EM-33, in concert with the Office of Health, Safety, and Security (HSS), Office of Nuclear Energy (NE), Office of Science (SC) and the National Nuclear Security Administration (NNSA), should consider the development and implementation of a consistent application of the appropriate regulations for the release of packages containing or last containing radioactive materials, as well as for the subsequent release of commercial motor carrier equipment used for the transportation of radioactive material at DOE sites Complex-wide. Because it was apparent that the inconsistent application of the release standards increased the costs of waste transportation activities, it may be appropriate to reevaluate the application of these regulations consistent with the principles of ALARA. Also, as a result of the evaluations conducted during this inquiry, several comments were developed and included in the attached report to prevent or minimize the recurrence of similar incidents in the future, and these suggestions are included for review and consideration by DOE.

This review effort was performed by Team members selected from EFCOG member organizations based upon their technical experience and direct involvement with the incidents of interest (see Team members list in the attached report). Representatives from the affected DOE waste generating sites, waste disposal facilities (NNSA and EnergySolutions Clive), and private industry participated in this effort and provided input. Also, this evaluation was conducted in cooperation and communication with the EFCOG Radiation Protection Subgroup of the Environment Safety & Health Working Group. Finally, DOE staff in EM, NNSA, and HSS were consulted during this evaluation.

The team members are prepared to support future efforts, if requested, by conducting additional reviews, providing assistance in implementing selected recommendations, or other actions on a Complex-wide basis. Please share this report with other individuals and organizations as appropriate. Questions regarding this report should be directed to me or the Team Leads, Mike Waters, Michael_s_waters@rl.gov, and Jim Portsmouth, James_H_Portsmouth@rl.gov.

Sincerely,



W. T. Goldston, Chair
EFCOG Waste Management Working Group
EnergySolutions

cc: Frank Marcinowski, DOE/EM-30
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