

December 2, 2005

Ruth E. McBurney, CHP, Manager  
Radiation Safety Licensing Branch  
Texas Department of State Health Services  
1100 W. 49<sup>th</sup> Street  
Austin, TX 78756

Dear Ms. McBurney:

I am responding to your November 15, 2005, letter to William Maier, Regional State Liaison Officer, in which you requested the U.S. Nuclear Regulatory Commission (NRC) to provide technical assistance by reviewing and concurring in the Texas safety conclusions for the radiological impact analysis which will apply to granting the requested exemption from Texas regulations. The key issues are the shipment of untreated contaminated KO-61 waste (baghouse dust) and that the subsequent possession and treatment of this waste by U.S. Ecology of Idaho's hazardous waste workers will not constitute an unacceptable risk to these individuals who are characterized as members of the public since U.S. Ecology of Idaho does not possess an NRC radioactive materials license.

Your request was sent to NRC staff in the Division of Waste Management and Environmental Protection to provide the technical assistance. Their analysis and conclusion is enclosed. The NRC staff has concluded that the variation from the criterion in the NRC staff technical position and the proposal by Nucor are acceptable. Therefore, the NRC concurs in the Texas safety conclusions for the radiological impact analysis which will apply to granting the requested exemption from Texas regulations.

If you have any questions on this letter please contact me at 301-415-3340 or Dennis Sollenberger at 301-415-2819. For questions on the enclosure, please contact Chris McKenney at 301-415-6663.

Sincerely,

*/RA/*

Janet R. Schlueter, Director  
Office of State and Tribal Programs

Enclosure:  
As stated

Ruth E. McBurney, CHP, Manager  
 Radiation Safety Licensing Branch  
 Texas Department of State Health Services  
 1100 W. 49<sup>th</sup> Street  
 Austin, TX 78756

December 2, 2005

Dear Ms. McBurney:

I am responding to your November 15, 2005, letter to William Maier, Regional State Liaison Officer, in which you requested the U.S. Nuclear Regulatory Commission (NRC) to provide technical assistance by reviewing and concurring in the Texas safety conclusions for the radiological impact analysis which will apply to granting the requested exemption from Texas regulations. The key issues are the shipment of untreated contaminated KO-61 waste (baghouse dust) and that the subsequent possession and treatment of this waste by U.S. Ecology of Idaho's hazardous waste workers will not constitute an unacceptable risk to these individuals who are characterized as members of the public since U.S. Ecology of Idaho does not possess an NRC radioactive materials license.

Your request was sent to NRC staff in the Division of Waste Management and Environmental Protection to provide the technical assistance. Their analysis and conclusion is enclosed. The NRC staff has concluded that the variation from the criterion in the NRC staff technical position and the proposal by Nucor are acceptable. Therefore, the NRC concurs in the Texas safety conclusions for the radiological impact analysis which will apply to granting the requested exemption from Texas regulations.

If you have any questions on this letter please contact me at 301-415-3340 or Dennis Sollenberger at 301-415-2819. For questions on the enclosure, please contact Chris McKenney at 301-415-6663.

Sincerely,

*/RA/*

Janet R. Schlueter, Director  
 Office of State and Tribal Programs

Enclosure:  
 As stated

Response to Incoming: ML053130312

Distribution: DCD (SP08)  
 DIR RF J. Kenney, DWMEP **SISP Review Complete**  
 WMaier, RIV VCampbell, RIV : Publicly Available  Non-Publicly Available  
 MHiggins, OGC CMcKenney, DWMEP : Non-Sensitive  Sensitive

**DOCUMENT NAME: E:\Filenet\ML053430066.wpd**

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

| OFFICE | STP              | DWMEP     | OGC      | RIV                             | STP:DD   | STD:D      |
|--------|------------------|-----------|----------|---------------------------------|----------|------------|
| NAME   | DSollenberger:gd | SFlanders | STreby   | LWert (via e-mail from LMcLean) | DRathbun | JSchlueter |
| DATE   | 12/02/05         | 12/02/05  | 12/02/05 | 12/02/05                        | 12/02/05 | 12/02/05   |

**OFFICIAL RECORD COPY**

## REVIEW OF THE NUCOR PROPOSAL TO TRANSFER UNSTABILIZED KO-61 WASTE TO U.S. ECOLOGY OF IDAHO FOR TREATMENT AND DISPOSAL

The State of Texas requested technical assistance from the U.S. Nuclear Regulatory Commission (NRC) on November 15, 2005, to allow Cesium-137 (Cs-137) contaminated KO-61 waste, such as emission control dust, which is waste generated by a steel manufacturing plant to be shipped from a Texas foundry, Nucor, to the Resource, Conservation and Recovery Act (RCRA) facility managed by U.S. Ecology of Idaho. The contaminated KO-61 waste was created by the accidental melting of a gauge containing 10 mCi of Cs-137.

In 1997, the NRC published in the Federal Register, a Final Staff Technical Position on the subject of disposing of contaminated emission control dust in RCRA facilities. The Final Staff Technical Position allows for KO-61 waste to be disposed at RCRA facilities as long as the pretreatment concentrations are less than 100 pCi/g, the waste has been stabilized, and the disposal facility has received less than 1 Curie of Cs-137 waste from all such "incident-related" sources. The technical position assumes that a licensed waste processor will treat (i.e., process and stabilize the waste) the waste prior to disposal. Texas incorporated the criteria in the Final Staff Technical Position into its regulations and intends to issue an exemption to the stabilization criterion if the NRC finds the Nucor proposal acceptable.

In this case, the situation meets most of the criteria in the staff position, except for the stabilization of the waste. The KO-61 waste averages approximately 3 pCi/g. Based on a letter from U.S. Ecology of Idaho, received on November 23, 2005, the facility has not previously received Cs-137 contaminated KO-61. The Nucor waste is currently in railcars and has not been stabilized. Nucor proposes to have U.S. Ecology of Idaho process and stabilize the KO-61 waste at the Idaho facility. U.S. Ecology of Idaho does not possess a waste processor license from the NRC.

To assess this variation on the staff position, the State of Texas calculated the exposure to the potential workers at the U.S. Ecology of Idaho site while stabilizing the waste. The potential dose was calculated to be a fraction of a mrem due to the distance between the worker and the waste, the small concentration in the waste, and the relatively short duration of the exposure. Cs-137 is primarily a hazard from external exposure for industrial exposures, therefore, the potential hazard from inhalation is minimal in this situation. NRC concurs with the Texas analysis and its conclusion that the stabilization process should not result in a significant dose and that the departure from the staff position is acceptable for this situation.

The staff also considered the impact from waste being in a more dispersible form (versus the stabilized waste form assumed in the Staff Technical Position) during transportation of the waste from Texas to Idaho. Ordinarily, waste in dispersible form could represent an additional risk in the case of an accident. However, the staff concludes that this situation should not result in a significant risk. The reasons are: (1) the low concentrations across the entire shipment would result in a small dose even in the event of an accident; and (2) the shipment is by rail which has a very low rate of accidents. In the event of an accident, the clean-up workers would likely get doses similar in magnitude (i.e., a fraction of a mrem) to the worker at the U.S. Ecology of Idaho site. This again is because of the relatively small concentration in the waste and the relatively short duration of the exposure. Any residual radioactivity remaining after clean-up would be to some degree diluted in the environment and even extremely conservative

long-term analyses, i.e., assuming that the derailment occurred in a residential neighborhood, would suggest peak doses of around 1 mrem per year. In this case, the resident is assumed to be exposed longer to residual Cs-137 but at a lower concentration due to dilution from the clean-up activities. The resident could also be exposed to cesium through their garden, if that were contaminated by the spilled KO-61. Given that the clean-up worker and the bounding conservative long-term analyses suggest negligible doses from an accident, the NRC finds the departure from requiring stabilization acceptable for this situation.

Based on this review, the staff finds the proposal by Nucor to be acceptable. The NRC will request the tonnage and concentration information from U.S. Ecology of Idaho after receipt of the KO-61 waste to update our files.