

July 27, 2004

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

RE: Your letter of June 28, 2004 regarding NRC inspection report No. 50-027/2004-201 and notice of violation

This letter is in response to the above Inspection Report and Notice of Violation. The report outlines two violations, both of which deal with labeling on packages shipped from WSU. Each of these deficiencies is listed below, as well as the facility response.

Violation A: *49 CFR Part 172.203(d)(6) requires that the description for a shipment of a Class 7 (radioactive) material must include on the shipping papers, the transport index assigned to each package in the shipment bearing Radioactive Yellow II or Radioactive Yellow III labels (49 CFR 173.403 defines Transport Index [TI] as the dimensionless number (rounded up to the next tenth) placed on the label of a package to designate the degree of control exercised by the carrier during transportation.)*

Contrary to the above, during the period from June 2002 to June 2004, no Transport Index was listed on the shipping papers of 28 shipments of packages of radioactive material bearing Yellow II labels made to various recipients.

WSU disagrees with this statement of violation. All of the referenced shipping papers have the Transport Index, which is equivalent to the radiation level measured at one meter, printed clearly on the label and the shipping papers. The issue here seems to be one of formatting; while all the materials contained a "Radiation Level 1 m" indicator, this was not designated as the Transport Index. The required information, however, was clearly indicated. A copy of such a shipping paper has been included.

Nevertheless, since our inspection, the shipping paper form has been modified to read "Transport Index" in this space, mainly to ensure complete clarity. However, as all needed information was in fact, included on the old-style shipping paper, and there are no formatting requirements listed in the appropriate regulations, the classification of this item as a violation seems somewhat irregular.

The WSU-NRC has changed the shipping paper form to clearly indicate that the value printed is the TI. Because the numerical value of the TI continues to be printed on all forms, it is WSU's position that it is now and was previously in compliance with 49 CFR Part 172.203(d)(6).

Violation B: *49 CFR Part 172.403(b) specifies that the proper label to affix to a package of Class 7 (radioactive) material is based on the radiation level at the surface of the package and the Transport Index (TI). Also, the label to be applied must be the highest category required for any of the two determining conditions for the package. 49CFR Part 172.403(c) requires that the category of label to be applied to radioactive material packages be Radioactive Yellow II if the TI is greater than 0 but not more than 1, or if the maximum radiation level at any point of the external surface is greater than 0.5 millirem per hour (mrem/hr) but less than or equal to 50 mrem/hr. (Footnote 2 to Paragraph (c) states that, if the measured TI is not greater than 0.02, the value may be considered to be zero. Also, 49 CFR 173.403 defines TI as the*

dimensionless number (rounded up to the next tenth) placed on the label of a package to designate the degree of control to be exercised by the carrier during transportation. For nonfissile material packages, the number is the maximum radiation level from the external surface of the package in millirem per hour at one meter.)

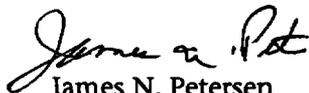
Contrary to the above, during the period from June 2002 to June 2004, 12 shipments were classified as White I instead of Yellow II even though the radiation levels measured at one meter from the surface of the packages being shipped read 0.06 millirem per hour or above, indicating a TI of 0.1 or greater, using the "rounded up to the next tenth" rule. This resulted in packages being shipped without the proper label attached and without the appropriate TI being designated.

The WSU-NRC uses an Excel spreadsheet to prepare shipping papers, and to evaluate dose and contamination data for these packages. Unfortunately, there was an error in the spreadsheet coding that caused incorrect outputs for packages with TIs in the ranges of 0.06 to 0.1. This is because the program would truncate numbers in this range to 0.0, rather than round them up. This spreadsheet appears to have been written in 1997, and it seems that the programmer assumed that MS Excel would simply round normally, rather than truncate. This error was not immediately apparent in most cases, because it would return proper responses for nearly all input data.

To correct this problem, the WSU-NRC has modified this spreadsheet to evaluate packages in this range of values. Basically, each package criteria (radiation levels on contact and at one meter) are evaluated individually, with each label category assigned a number (ie. 1 for white 1), as per 49 CFR 172.403(c), and then the two criteria are compared. The higher of the two numbers will return the correct label category for the package. The corrected program has been implemented on the computer that is used for shipping, and all shippers are now using the corrected spreadsheet. This corrected version has been tested on the values that were returned incorrectly on the previous version, and now identifies label requirements correctly for those values.

These changes should be sufficient to ensure that all packages are shipped properly in the future, and should the USNRC have any comments or questions about this response, please feel free to contact me, Dr. Gerald Tripard, or Ms. Stephanie Sharp of the WSU Nuclear Radiation Center.

Sincerely,



James N. Petersen
Vice Provost for Research
Battelle Distinguished Professor of Bioprocessing

JNP/jo

Attachment

cc: Robert C. Bates
Dwight E. Hagihara
Leonard E. Porter
Stephanie L. Sharp
Gerald E. Tripard

RADIOACTIVE MATERIAL SHIPPING PAPERS

Washington State University

Reactor Staff
 RAML # WN-C003-1
 Nuclear Radiation Center
 Pullman, WA 99164-1300
 (509) 335-7592 FAX:(509) 335-4433

Shipping Date: December 12, 2003

Shipped To:		Material From:	
Recipient:	Mike Brewer (505) 888-0144	Authorized User:	Dr. Gerald Tripard
Licensee:	SpectraTek Services	Department:	Nuclear Radiation Center
Address:	2726 Aztec N.E.	Bldg./Rm. #:	Nuclear Radiation Center
City/State/Zip:	Albuquerque, NM 87107		

BASIC DESCRIPTION

(Proper Shipping Name, Hazard Class, UN ID#)

Number of Containers:

Radioactive Material, Type A package, Class 7, UN2915

1

Material Shipped

Nuclide	Total Activity of Shipment	Chemical Form	Physical Form
Ir-192	96.65 GBq	Proppant	Solid
Ir-194		Proppant	Solid

Activity Date: December 12, 2003

Security Seal Number: 675

Container Type:	Type A Packaging	Package Radiation Levels:		
Label:	Yellow III	Radiation Level 1 cm	0.25	mSv/hr (25 mRem/hr)
Can, Drum #:	0280B,2	Radiation Level 1 m	0.015	mSv/hr (1.5 mRem/hr)
Contaminated:	NO	Inner Vail Wipe Results	n/a	CPM (Not Required)

Container Wipe Test Background
(Gross CPM)

23

Container Wipe Test Results
(Net CPM)

-2

Less Than 49 CFR 173.443, Table 11

Notify Washington State University, Nuclear Radiation Center at: (509) 335-8641 or (509) 335-9000 for 24 hour emergency service, if there are any irregularities in this shipment, such as broken or leaking containers, contamination, or the wrong material.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable federal, state, local, and international regulations for the transportation of hazardous materials. The values for isotope content and activity of isotopes is based on activity and dose-rate calculations stated in the irradiation request form supplied by the authorized user. All values are calculated from the end of the cooling period.

Shipment Approval: _____



12/12/2003

Date