-----Original Message-----
From: Susan D. Radzinski [mailto:sradz@lanl.gov]
Sent: Monday, August 23, 2004 10:03 AM
To: KIRK.W.OWENS@saic.com
Cc: sradz@lanl.gov
Subject: Fwd: Input for SWEIS - OSR Project

Kirk,

I just received this. As you can see from the correspondence, Elizabeth wants this project included in the SA. There has been already been a SA, DOE/EIS-0238-SA4, written for Sr-90, but this project would be more inclusive in the upcoming document.

I will try to get you on the speaker phone about 10 my time so that you can participate in the meeting with Elizabeth.

Susan

>X-Sender: dpava@beasley.lanl.gov
>X-Mailer: QUALCOMM Windows Eudora Version 5.1
>Date: Fri, 20 Aug 2004 13:27:57 -0600
>To: sradz@lanl.gov
>From: Dan Pava <dpava@lanl.gov>
>Subject: Fwd: Input for SWEIS - OSR Project
>X-Scanned-By: MIMEDefang 2.35
>
>Susan, attached is information from Mike Pearson about OSR that he
>apparently sent to Ellen in early July so it never got to me or you, I'm
>guessing. Mike had contacted me earlier today asking about the status of
>the SA and OSR as Elizabeth had determined that OSR should be included in
>the SWEIS SA rather than under a separate EIS. Let me know if you need
>more clarification.
>
>
>>X-Sender: mwp@norris-mail.lanl.gov
>>X-Mailer: QUALCOMM Windows Eudora Version 6.1.2.0
>>Date: Fri, 20 Aug 2004 12:58:31 -0600
>>To: dpava@lanl.gov
>>From: Michael Pearson <mwp@lanl.gov>
>>Subject: Fwd: Input for SWEIS - OSR Project
>>X-Scanned-By: MIMEDefang 2.35
>>
>>Dan,
>>
>>Thanks for responding. Here is the e-mail and the document that was sent
>>over for input. If the attachment doesnt come through, please let me
>>know and i will transmit it separately.

>>M. W. Pearson, CHP
>>RRES-CH On-Site Ops Tm Ldr
>>Off-Site Source Recovery Project
>>MS J552 TA 46 Bldg 231
>>PHONE 505-665-0483
>>CELL 505-699-9411
>>FAX 505-665-7913

Discussion – Source Management at LANL

Management of sources containing expansion nuclides at LANL will be restricted to those sources requiring movement for national security, as directed by NA-20.1, when utilization of commercial facilities for storage or disposal is not possible or not available. Since the numbers of sources and resulting volumes of wastes to be generated from this new nuclide inventory remain unknown at this time, the OSR Project proposes initial evaluation of management at LANL within the existing authorization basis (AB), security and Material Control and Accountability (MC&A) limitations for the designated LANL facilities. Existing LANL/LASO authorization and approval requirements, work package agreements, design safety analyses, technical safety requirements, security reviews and other limiting requirements will ensure operations at LANL for expansion nuclides will remain within the existing compliance envelop and institutional controls.

Sources, packaged and transported from off-site in compliance with the Department of Transportation requirements in 49CFR, are received at LANL at the receiving warehouse (SM-30) at TA-3. Upon receipt, containers are subjected to inspection and radiological survey requirements and subsequently shipped to other LANL facilities for storage, or to an interim facility for further handling, characterization, packaging etc. until other storage is available. Sources containing expansion nuclides requiring additional handling, treatment, and/or packaging are trans-shipped to Wing-9, CMR as the preferred interim facility. In Wing-9, packaging and transportation for storage, or transfer to other LANL organizations for use as appropriate may take place. OSR Project operations and storage capabilities exist at LANL at Wing-9 CMR. Warehouse-1, TA-18 and TA-54, Area G are also LANL facilities utilized by. Disposal at LANL, although available for isolated sources, is not being considered for routine disposition of the expansion nuclide sources.

Management of Expansion Nuclides Within LANL

Management of the expansion nuclides, if directed to LANL, will follow the same approach used for existing sources under management at LANL. Prior to source packaging and movement to LANL, the OSR Project staff would ensure that management at commercial or other location was not appropriate and concurrence from DOE/NNSA would be obtained. In addition, existing planning processes would be employed to ensure all prerequisite activities were completed, including:

- Verification that sources meet eligibility requirements for recovery
- Verification that no recycle or reuse potential exists which would eliminate necessity for movement of materials to LANL for management
- Identification of handling/storage facilities exist at LANL for materials to be recovered
- Verification that source recovery and management at LANL meets the compliance and authorization envelop of the site.

Upon receipt at LANL, sources would be managed to minimize impacts on existing and planned NNSA operations within the facilities used to support source management. A

discussion of the facilities involved and potential use in management of additional nuclides follows.

Wing 9, CMR

Wing 9, CMR, operated by NMT-11 has supported OSR Project operations since FY94. The Wing contains Hot Cells with remote/slave manipulators allowing complex remote source handling capabilities with maximum shielding for dose reduction. The Wing has 360 floor holes, most currently empty, which could be made available for storage of high-activity beta/gamma sources in a shielded configuration. Storage pits are also available within Wing-9 for storage of large items.

Wing-9 was designed to serve as a high-specific activity material handling facility. The hot cells provide for safe, receipt, handling and disassembly of large high-activity items. Storage of large numbers of individual sources of small physical size can be accommodated in the floor hole storage areas. The shielding offered by the floor hole design, coupled with manipulator handling of sources and shielded transfer carts to move sources from the hot cells to the floor holes minimizes potential radiation exposure to workers in the Wing.

In addition, the design of the Hot Cells, with large access corridors, manipulators and larger capacity material handling devices, is ideal for disassembly of devices containing multiple sources with subsequent placement of sources in shielded storage configurations and disposition of devices as appropriate. This capability could be applied to the receipt, disassembly and management of sources contained in irradiating devices such as research irradiators, blood irradiators or other devices containing multiple sources of high specific activity.

The pit offers storage capacity for larger, bulkier items in shielded configuration prior to disassembly or disposal containers packaged in a final disposal configuration awaiting movement to other LANL facilities or locations for further storage or disposition.

Current safety basis limits for operations within the Wing would limit the content of the expansion nuclides, (in areas of the wing designated) – to the activities indicated in Table 1. The limits in the table are the maximums allowed in the stated part of the facility and would require adjustment based on other operations/materials in the facility.

The “floor” within Wing 9, is any location in the Wing outside a hot cell or corridor or not in a floor hole. Limits expressed for floor holes assume worse case storage configurations for adjacent floor hole content.

Facility operations and inventories are also subject to limitations based on radiological sabotage. A generic evaluation of the limiting quantities for the expansion nuclides is shown under the Security column in the table. Specific limits for this facility cannot be provided in an unclassified communication.

Table 1. Activity Limits for Wing 9, CMR

Nuclide	Total Hot Cell and Corridor (Ci)	Floor (Including the Pit) (Ci)	Each Floor Hole (Ci)	Security (Ci)
Co-60	3,420,000	88,400	291	10,000,000
Sr-90	580,000	15,000	3,880	No Limit
Cs-137	23,500,000	607,000	4,070	No Limit
Ir-192	26,400,000	681,000	530	10,000
Ra-226	87,400	2,260	156	No Limit
Cm-244	2,850	73.7	129	1,000
Cf-252	6,100	158	60.3	200

TA-18

OSR Project activities at TA-18 are currently limited to maintenance and use of a CAT III-C MBA for the storage of Pu-239 sealed sources packaged as TRU waste. Management of expansion nuclides at LANL, would not be likely to involve use of any TA-18 facilities. Therefore, no analysis was performed to identify current limitations for the expanded nuclides.

TA-54, Area G

TA-54, Area G is the location of LANL's low-level radioactive waste (LLW) disposal area and the TRU waste storage facilities. Expansion nuclides could be stored at this facility, as directed by DOE/NNSA as LLW. The facility is authorized for disposal of DOE owned LLW, less than GTCC, and for storage of TRU. Storage of LLW is also authorized. Safety basis limitations on materials located in the area are indicated in Table 2. The limitations are described in Table 2 as plutonium-equivalent-Curies (PECI) which is the accepted unit method of the facility to normalize activity.

Table 2. Activity Limits for TA-54, Area G

Description – Site Location	Limit (PECi)
TA-54 Site	8,000,000 (Ci)
Above ground limit – all domes	150,000
Individual domes	25-50
Exposed in shaft	1200
Exposed in Active Pit	500
55 Gallon POC	1800
85 Gallon Overpack	1100
55 Gallon Drum	300

Table 3. shows the actual activity limit, by expansion nuclide, for each of the locations shown in Table 2.

Table 3. Expansion Nuclide Activity (Ci) at TA-54 Area G

Nuclide	All Domes (150K)	Individual Dome (25K)	Exposed Shaft (1200)	Exposed Active Pit (500)	55 Gallon POC (1800)	55 Gallon Drum (1100)	85 Gallon Overpack (300)
Co-60	5.10E+08	8.50E+07	4.08E+06	1.70E+06	6.12E+06	3.74E+06	1.02E+06
Sr-90	5.88E+07	9.80E+06	4.70E+05	1.96E+05	7.06E+05	4.31E+05	1.18E+05
Cs-137	2.39E+09	3.98E+08	1.91E+07	7.95E+06	2.86E+07	1.75E+07	4.77E+06
Ir-192	3.33E+09	5.55E+08	2.66E+07	1.11E+07	4.00E+07	2.44E+07	6.66E+06
Cm-244	2.84E+05	4.73E+04	2.27E+03	9.45E+02	3.40E+03	2.08E+03	5.67E+02
Cf-252	5.88E+05	9.80E+04	4.70E+03	1.96E+03	7.06E+03	4.31E+03	1.18E+03

SM-30 TA-3

There are no known safety basis restrictions affecting the receipt and movement of expansion nuclides through the TA-3 Receiving Warehouse.

Summary:

This management plan has described the general strategy by which the OSRP can begin to address the expansion nuclides as requested by NNSA in FY-04. It also provides a skeletal foundation on which to build in FY-05 to form a fully integrated program that addresses all of the requirements of an expanding threat reduction responsibility within NA-20.2.

The means (the funding) by which the project can begin working directly with B-NV is in place and initial work has begun. A preliminary analysis of LANL facilities, which currently support OSR Project activities, suggests that there is significant capacity within the existing compliance envelop to provide major support to the accommodation of the expansion nuclides.