DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD
FORT BELVOIR, VIRGINIA 22060-6223

IN REPLY
REFER TO DNSC-ME

APR 0 2 2009

MS 16
Q-5

2009 APR -6 AM 10:45

RECEIVED
REGION I

U.S. Nuclear Regulatory Commission
Region I, Nuclear Materials Safety Branch
Division of Nuclear Materials Safety
ATTN: Ms. Betsy Ullrich
475 Allendale Road
King of Prussia, PA 19406-1415

04000341

Re: License STC-133

Subject: Response to U.S. Nuclear Regulatory Commission Region I Letter of December 4, 2008: *Defense Logistics Agency, Request for Additional Information Concerning Application for Amendment to License, Control No. 138087*

Dear Ms. Ullrich:

The Defense National Stockpile Center (DNSC) has enclosed for the NRC's consideration, a discussion and supporting attachments regarding the NRC's request, contained in the subject correspondence for an estimate of the total dose from the entire site where licensed activities took place and a justification as to why a 1971 partial site release (PSR) of adjacent property would not be expected to contribute to the dose from the recently remediated and surveyed Harnmond Depot property (HD) site; therefore, eliminating the previously released site from the total dose estimate. We refer to the original approximately 130 acre site as the Hammond Depot, the adjacent Warehouses 1, 2, and 3 and the surrounding areas (approximately 73 acres) sold in 1972/73 as the PSR property and the remaining current site (approximately 57 acres) as the HD.

The enclosed pages provide a review of the information available from the1971 remediation and an estimation of dose from the PSR property, information from the Final Status Survey report of the HD property, and a discussion of DNSC's justification. We would greatly appreciate NRC completing the review of the final status survey report we submitted on April 21,2008, and this new documentation, and provide concurrence that the site may be released from License STC-133.

138087

RGN1 MATERIALS 002

Should you have any questions regarding this letter, please contact me. You may also call Mr. Tim Vitkus, CHP, of the Oak Ridge Institute for Science and Education (ORISE) at (865) 576-5073.

Sincerely,

Michael J. Pecullan
Radiation Safety Officer

Attachments

RESPONSE TO U.S. NUCLEAR REGULATORY COMMISSION REGION I LETTER OF DECEMBER 4,2008:
DEFENSE LOGISTICS AGENCY,
REQUEST FOR ADDITIONAL INFORMATION CONCERNING
APPLICATION FOR AMENDMENT TO LICENSE, CONTROL NO. 138087

Introduction

The Hammond Depot (HD) in Hammond, Indiana was established to store strategic materials in 1948. The original site had eight warehouses and 80 above ground storage tanks sited on 130.5 acres. The General Services Administration (GSA) sold portions of the property, including three warehouses and approximately 73 acres of the land—the partial site release (PSR)—during the 1970s (ORISE 2005). In addition to storing various strategic commodities such as ores and metals, the Hammond Depot also began stockpiling radiologically licensed material, reactor grade thorium nitrate (ThN), in 1962. New shipments of the material for storage continued until 1964. Inventory records showed that one of the warehouses included with the PSR, Warehouse 2, was the original facility used for storage of the ThN. The only identified area used for ThN storage was Section D of Warehouse 2.

The current HD site consists of 57.3 acres. The NRC, in the subject letter, requested that the DNSC provide an estimate of the total dose from the entire site where licensed activities took place. It is the contribution to the HD Total Effective Dose Equivalent (TEDE) from any residual source material present at these former depot buildings and land areas (the PSR property) that will be the focus of the following discussions.

History

The stockpiling of the ThN began in 1962 with shipments continuing until 1964. Almost immediately after receipt of the first shipments, the depot manager at the time began regular inspections. These inspections were documented and the number of ThN drums identified with leaks was recorded by lot number. The following table was generated from inspection records and shows the number of leaking containers identified per year.

YEAR	# OF LEAKING DRUMS	CUMULATIVE TOTAL
1963	**3**	
1964	14	17
1965	12	29
1966	***23***	52
1967	46	98
1968	79	177

Some leaking containers were returned to the supplier for repackaging but, during the above period drums continued to fail. A determination was made that vapors present within void space between the plastic drum liner and the drum wall were corroding the drums and causing the leaks. Leaking drums were finally repackaged in overpacks.

In preparation for the sale of the PSR, Warehouse 2 was emptied and the ThN moved to Warehouse 200E in 1968. Once the building was cleared, surveys of Section D were preformed and determination made that approximately 1,600 square feet (140 square meters) of the floor was contaminated. A map of this survey is provided in Attachment A as well as for overhead trusses. An acid wash study as a means of reducing hot spot contamination levels was performed by depot personnel. Prior to the sale, a remediation contract was issued in 1971 and Section D was remediated by chipping contaminated concrete and a survey performed. The property was then sold. A summary of the above actions as well as other activities involving the ThN is provided below in the sequential time line:

1. 1962 through 1964: A total of 2,472 drums of ThN were shipped to HD and placed in storage in Section D of Warehouse 2.
2. 1967: AEC inspector provides written discussion on cause of leaking drums. Phenomenon is a result of void space between the plastic liner and the drum.
3. 1968: After the leaking drums were repackaged, all 2,472 drums were moved to Warehouse 200E. Investigations of the then empty section of Warehouse 2 found contamination on the floor and also small areas outside the exterior doors on both sides of the building. Two layers of kraft paper, with an asphalt layer between covered the floor while the source material was stored. The initial decontamination involved removal of the kraft paper and the exterior areas were decontaminated.
4. 1970 and 1971: Survey performed that identified approximately 1600 square feet (140 square meters) of the Warehouse 2, Section D floor had been impacted with contamination. HD personnel test nitric acid washing to reduce hot spots.
5. 1971: A GSA contractor remediated Section D of Warehouse 2 in accordance with the radiological standards that were applicable at that time. The floor was decontaminated by concrete chipping. A final survey was performed and the floor area was certified to not exceed the applicable standards of 5,000 dpm/100 cm^2 alpha fixed contamination and 1,000 dpm/100 cm^2 alpha removable contamination. Attachment A provides the certifying letter.
    a. For comparison, the recent NRC-approved derived concentration guideline level for surface contamination at the Harnrnond Depot is 400 dpm/100 cm^2 for Th-232. The 1971 guideline of 5,000 dpm/100 cm^2 for alpha contamination would equate to 952 dpm/100 cm^2 from the Th-232 contribution — based on 5.25 alpha decays for the natural thorium decay series in equilibrium.
6. 1972/1973: GSA sells 73.2 acres and associated warehouses (PSR) leaving the 57.3 acres that comprise the current day HD site. The entire thorium nitrate drum inventory remained in storage in the southern half of Warehouse 200E.
7. Late 1970s: Thorium nitrate drums were Qscovered leaking in Warehouse 200E. All drums were overpacked and moved to Warehouse 100W. Surfaces of Warehouse 200E were decontaminated and surveyed from August to September 1979. The warehouse floor was resurfaced with asphalt and the area was again used for commodity storage. Residual total surface acuvities levels were reported as less than the applicable thorium-232 guidelines.
8. December 1993: NRC requests information regarding former properties that have been released for unrestricted use where radiological contamination may exist in excess of NRC's then current criteria for unrestricted use (Attachment B).

9. January 1994: The DNSC issued a response letter to the NRC that provided the requested information for all DLA properties, includmg the Hammond Depot (Attachment B).
10. 2005: The overpacked thorium nitrate drums were removed from Warehouse 100W for transfer to the Department of Energy's Nevada Test Site. Scoping surveys of Warehouse 200E identified residual contamination within cracks and expansion joints on the floor as well as other isolated areas of contamination. Based on these results, DNSC issued a December 8, 2005 letter to NRC detailing the possible relationship to Warehouse 2 conditions. The letter to NRC specifically noted that no communications had been received from NRC regarding any additional concerns with respect to the radiological status of Warehouse 2 since the 1993 correspondence (Attachment B).
11. 2006 to 2007: Complete radiological characterization surveys of the HD were performed. Remediation and final status surveys of the entire site were completed.
12. 2008: Final status survey report was issued to NRC demonstrating that the HD satisfied the license termination release criterion of less than 25 mrem/year to the average member of the critical group(s).

Dose Estimate

It is critical to view the following dose estimates as plausible boundmg conditions. These dose estimates are based upon best professional judgment and not site-specific radiological data. For this Iscussion, the actual critical group would consist of individuals who work withm Warehouse 2, and more specifically within the Section D area.

The December 2005 letter presented in the above history was issued following the completion of the scoping survey of Warehouse 200E. This scoping survey identified residual contamination such that it was immediately clear that the remedial actions that had occurred in Warehouse 200E during the 1980s had not reduced contamination to the levels originally documented. Because of similarities in the contaminating mechanisms between these two buildings, DNSC felt there was a potential that contamination may have also migrated into floor cracks or expansion joints at the time of the spill or gone undetected on other surfaces in Warehouse 2, Section D, and not been completely remediated as observed within Building 200E. It is this potential residual contamination within floor cracks, as well as potential contamination present on floors or walls of Section D of Warehouse 2 or small areas of residual soil contamination, exceedmg the HD DCGLs that could potentially impact the HD TEDE—which is discussed further in the Prospective Scenario Discussion — or current workers in Warehouse 2 of the PSR. *It is important to note that this is a hypothetical discussion, as there currently is no specific evidence to support either a contaminated (meaning Th-232 average surface activity levels in excess of 400 dpm/100 cm^2) or uncontaminated scenario within Warehouse 2.*

The following represents a simplified dose estimate for the PSR property. The estimate is a bounding scenario, potentially representative of both a reasonable lower and upper bound. The presented estimate must be significantly qualified as to the input parameters as there are a number of assumptions to consider and very little original data to better reconstruct actual conditions of Section D of Warehouse 2. The foundation of the presented estimation consists of the following parameters, each of which will be explained further:

1. The certifying statement that the guidelines, in effect at the time of PSR, were met. That is, that contamination was less than 5,000 *a* dpm/100 cm^2;
2. Ratioing of the 400 dpm/100 cm^2 HD Th-232 surface activity DCGL to the estimated Warehouse 2/Section D assumed conditions;
3. The pre-remediation, as found radiological status of Warehouse 200E relative to Th-232 contamination.

The lower-bound of the dose estimation is based in the assumption that the surface contamination levels in Section D of Warehouse 2 are less than or equal to 5,000 *a* dpm/100 cm^2. The warehouse continues to be used for light industrial/warehousing operations by private companies. Therefore, it is assumed that the critical group remains a warehouse worker and parameters used for developing the HD structural DCGLs are also applicable to a worker in Warehouse 2. As such, a direct ratioing of the HD DCGL may be used as comparison. As expressed in the history item 5a, above, the 5,000 *a* dpm/100 cm^2 activity level may be expressed in terms of Th-232 activity as 950 dpm/100 cm^2. Therefore, the estimated dose if residual activity levels would be less than or equal to:

$$(950/400) \times 25 = 59 \text{ mrem/y}.$$

An example upper 95% confidence level was calculated using all pre-remediation characterization survey data from Warehouse 200E as a surrogate scenario. *The* DNSC *does not contend that this scenario does or does not apply to Warehouse 2 and only provides this information as feasible based on similar histo y between the two warehouses.* Attachment B contains the results of the upper confidence level obtained as an output from the U.S. EPA's ProUCL Version 4.0 software. The output recommended use of the 95% Chebyshev UCL which was calculated at 2,676 dpm/100 cm^2. Again using the ratioing method, the upper bound of an estimated dose would be 167 mrem/y. The mean value of 1,463 dpm/100 cm^2 results in a direct ratioed dose estimate of 91 mrem/y.

Prospective Scenario Discussion

The principal basis for this response is founded in Appendix K of NUREG 1757, Vol. 2 Rev. 1(NRC 2006).

DNSC does not believe it is necessary to discuss the reverse scenario; that is, the dose contribution from the HD to the PSR property. The justification for this position is that DNSC's recent completion of extensive remediation at the HD has demonstrated that residual source materials at the HD are a small fraction of the 25 mrem/year dose kt — less than 0.5 mrem/y for outdoor soil areas and less than 4 mrem/y within structures—as detailed in the final status survey report (ORISE 2008). As provided in NUREG 1757, Vol. 2 Appendix K, this portion of DNSC's response is via a prospective scenario involving the interactions—i.e. dose contributions—from the PSR property to the HD.

Because the information available for the radiological conditions of Warehouse 2 is k t e d to a certifying statement that levels are below the historical 5000 dpm/100 cm^2 *a* fixed contamination guideline, this justification for release of the HD relies on the conditions as found in Warehouse 200E as the comparable scenario for Warehouse 2.

The potential magnitude of impacted areas is quite Qfferent between the HD and PSR properties. Approximately 2,300 m^2 of floor area, of the southern half of Warehouse 200E were impacted by the material released from more than 442 leaking drums as was approximately 4,000 m^2 of land, representing 2.7% of the present day HD. An approximately 140 m^2 floor area portion of the Warehouse 2/Section D was impacted from the 177 drums that developed leaks. This footprint area represents 0.04% of the total area of the PSR property.

With both the above and dose estimate information, the DNSC maintains that there is limited if any probability of the PSR property contributing any measurable contribution to the TEDE of an average member of the critical group, an HD site employee/resident for the warehouse worker scenario or resident farmer scenario. The PSR property is no longer a part of HD and is privately owned and controlled. An HD employee would not be expected to work both at HD and within Warehouse 2 where the possible modes of exposure would be direct gamma exposure or inhalation/ingestion of some fraction of a small source term.

The other mechanism for dose contribution to an HD employee/resident from the PSR property would be migration of an hypothesized source term from the PSR property to HD. The extensive knowledge gained during the investigations and remediation of the HD contamination conclusively demonstrated that there had been no observable migration of contamination from within the warehouse, nor from the exposed outdoor areas. The extensive and intrusive characterization investigations in Warehouse 200E showed that when the leak occurred, material did follow cracks and expansion joints and reached the sub-floor strata. This stratum was the ubiquitous monolithic slag beneath the site. Rather than penetrating the slag beyond the first few centimeters, the leaked material spread horizontally across the slag, radiating out from the cracks/expansion joints a distance of from 1 to 2 meters. The underlying slag contamination profile essentially duplicated the floor contamination profile. There was no migration outside the bounds of the warehouse. Because the contamination was tightly entrained within the respective matrices, remediation required the physical removal of the floor followed by hydraulic rams to break out the surface contaminated slag. Therefore, it can be conclusively argued that any residual contamination inside of Warehouse 2 would be similar if not identical to that found in Warehouse 200E, and could not migrate and impact HD, and very likely not impact the PSR area outside the immediate confines of Warehouse 2/Section D itself.

Furthermore, extensive evidence of the non-mobile nature of the contamination was shown in the large outdoor contaminated area near Ferrochrome Pile No. 6 at the HD. Although contamination was present up to the fence line, there was no migration past that point. Water samples collected from intruding groundwater were free of Th-232. Lastly, there was no evidence of any windblown contamination.

Each of the as-found conditions at the present day HD support the contention that any remaining contamination associated with the PSR property should not result in a measureable dose contribution to the HD site critical group(s) and any residual source material concentrations at the HD are nearly indistinguishable from background and could not impact the PSR.

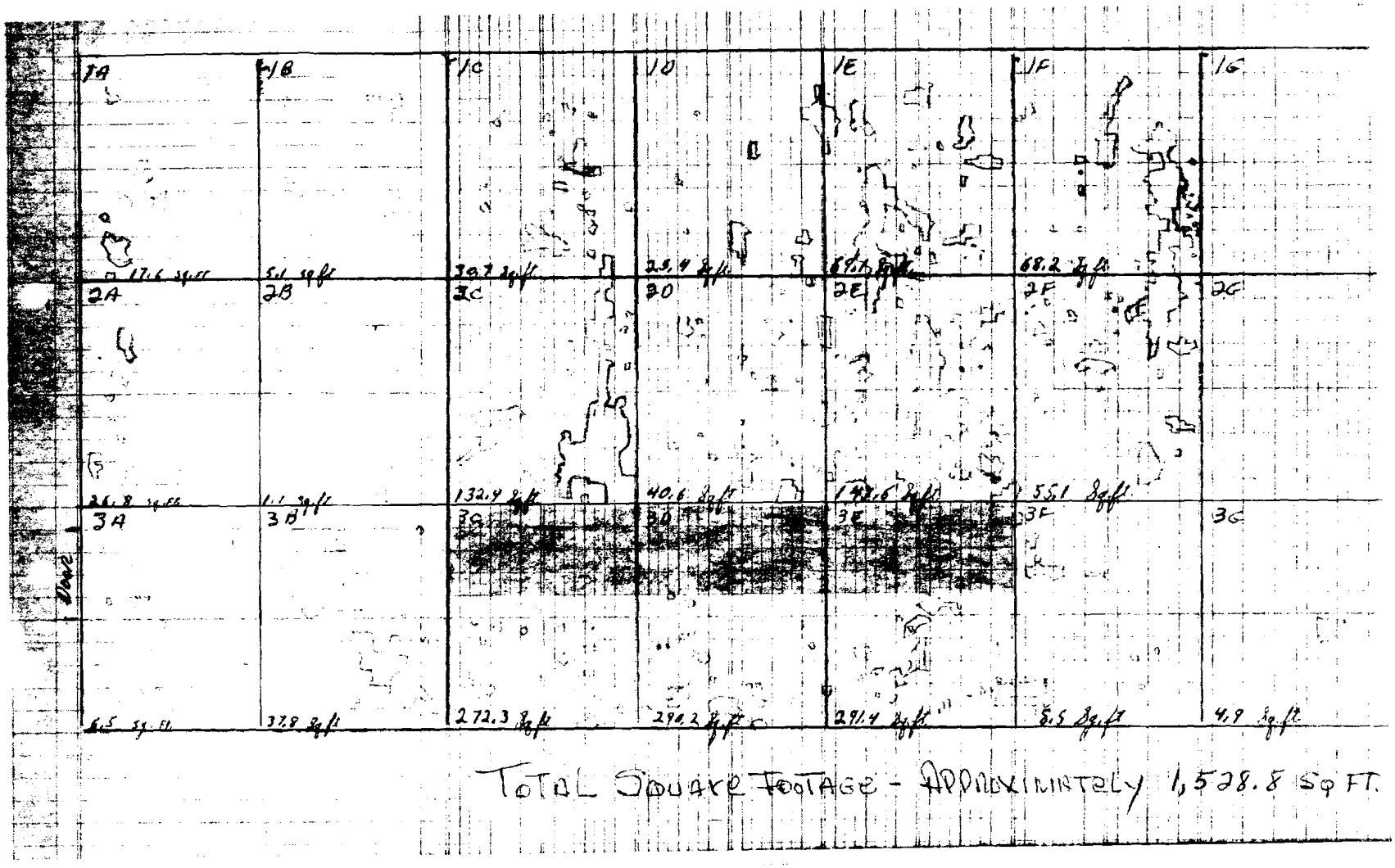
REFERENCES

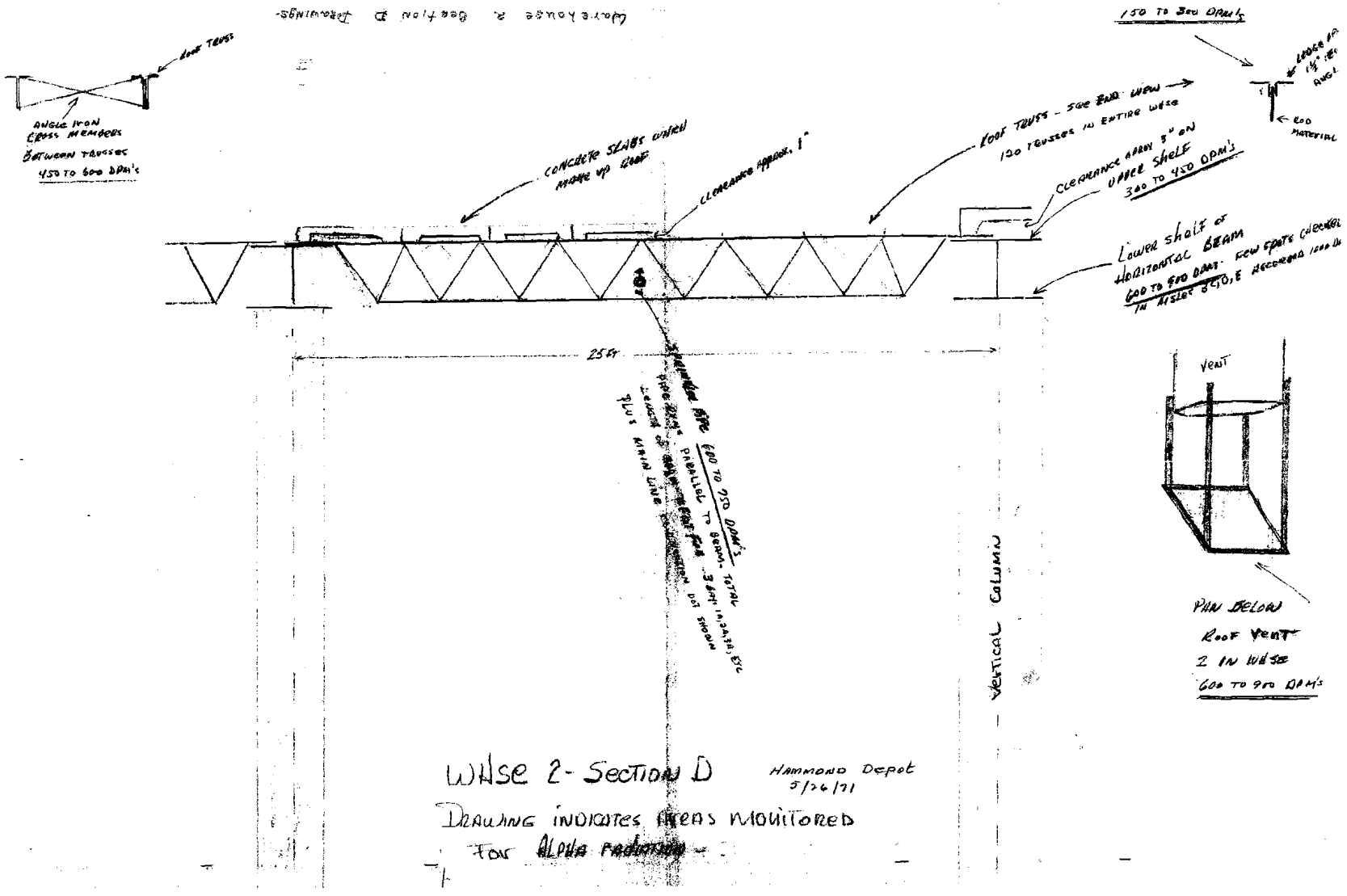
Oak Ridge Institute for Science and Education (ORISE). Final Report—Historical Site Assessment of the Hammond Depot, Hammond, Indiana. Oak Ridge, TN; August 2005a.

Oak Ridge Institute for Science and Education. Radiological Final Status Survey of the Hammond Depot, Hammond, Indiana. Oak Ridge, TN; April 2008.

U.S. Nuclear Regulatory Commission (NRC). Consolidated NMSS Decommissioning Guidance, NUREG-1757, Volume 2; Rex-ision 1. Washington, DC; September 2006.

ATTACHMENT A


1A
1B
1C
1D
1E
1F
1G
17.6 sq ft
5.1 sq ft
39.7 sq ft
23.4 sq ft
68.2 sq ft
2A
2B
2C
2D
2E
2F
2G
26.8 sq ft
1.1 sq ft
132.4 sq ft
40.6 sq ft
142.6 sq ft
55.1 sq ft
3A
3B
3C
3D
3E
3F
3G
6.5 sq ft
37.8 sq ft
272.3 sq ft
294.2 sq ft
291.4 sq ft
8.5 sq ft
4.9 sq ft
TOTAL SQUARE FOOTAGE - APPROXIMATELY 1,528.8 SQ FT.


ROOF TRUSS
ANGLE IRON CROSS MEMBERS BETWEEN TRUSSES
450 TO 600 DPM's
CONCRETE SLABS WITH MOPE UP COAT
CLEARANCE APPROX. 1"
ROOF TRUSS - SEE END VIEW
120 TRUSSES IN ENTIRE WISE
CLEARANCE ABOVE 3' ON UPPER SHELF
300 TO 450 DPM's
150 TO 300 DPM's
Lower shelf of HORIZONTAL BEAM
600 TO 900 DPM's
254'
VERTICAL COLUMN
VENT
PAN BELOW
ROOF VENT
2 IN WISE
600 TO 900 DPM's
WISE 2 - SECTION D
HAMMOND DEPOT
5/26/71
DRAWING INDICATES AREAS MONITORED
FOR ALPHA RADIATION

GAMMIE NUCLEAR SERVICE CO., INC.

PIPE LEAK FINDING · INDUSTRIAL PROCESS TRACING

3737 MT. PROSPECT RD., FRANKLIN PARK, ILL. 60131 PHONE (312) 766-6770

SEPTEMBER 22, 1971

MR. MARSHALL BRADLEY
CHIEF INSPECTION BRANCH
GSA-PMDS
RM 1282 FEDERAL BUILDING
219 SOUTH DEARBORN STREET
CHICAGO, ILLINOIS 60604

DEAR MR. BRADLEY:

WE HEREBY CERTIFY THAT WE HAVE MONITORED THE ENTIRE FLOOR AREA IN WAREHOUSE 2, SECTION D, GSA-PMDS HAMMOND DEPOT, HAMMOND, INDIANA, AND THAT THE CONTAMINATED FLOOR AREA DOES NOT EXCEED THE FOLLOWING AT ANY LOCATION:

5,000 DPM/100 CM^2 FIXED ALPHA
1,000 DPM/100 CM^2 REMOVABLE ALPHA

RESPECTFULLY SUBMITTED,

GAMMIE NUCLEAR SERVICE CO., INC.

DONALD G. GAMMIE, PRESIDENT

DGG:EB

ATTACHMENT B

DEC 2 2 1993

Kevin Reilly
DLA/DNSC-O
1745 Jefferson Davis Highway
Suite 100, Crystal Square #4
Arlington, VA 22204
License No. STC-133
Docket No. 040-00341
Dear Mr. Reilly:

Per our recent phone conversation, the Nuclear Regulatory Commission staff is evaluating the radiological status of former Defense Logistics Agency/General Services Administration (DLA/GSA) properties that have been released for unrestricted use by NRC or are no longer listed as locations of use on source material license STC-133. NRC staff has examined the records in our possession and has determined that the current radiological status of several current and former DLA/GSA properties is uncertain in terms of whether radiological contamination may exist in excess of NRC's current criteria for unrestricted use. These criteria were identified in the Site Decommissioning Management Plan Action Plan (57 FR 13389, April 16, 1992) A list of these properties is enclosed.

NRC is requesting your assistance in determining the radiological status of these properties at the time they were released from your license. To assist us in our review please provide all records you may have on any radiological termination or close-out surveys that were performed by DLA/GSA personnel in support of the removal of these properties from your license.

In addition, we would like to hold a conference call during the week of January 10, 1994 between NRC Headquarters, NRC Region I, and DLA staff to discuss the next steps in resolving the radiological status of these properties. Please contact me as soon as possible to arrange this call.

If you have any questions concerning this request, please contact me at (301) 504-2566.

Sincerely,
(Original Signed)
Dominick A. Orlando, Project Manager
Decommissioning and Regulatory
Issues Branch
Division of Low-Level Waste Management
and Decommissioning
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated
Ticket
DISTRIBUTION: Central File NMSS r/f JHolonich MBell
TJohnson LBell LLWM r/f JAustin JKinneman, RI
Flamberger EReber, RI
SUBJECT ABSTRACT: REQUEST FOR INFORMATION ON FORMER DLA SITES

OFC :	LLDR		LLDR	E						
NAME:	DOrlando		MWeber							
DATE:	/93		12/22/93	H						

Path & File Name: OFFICIAL RECORD COPY
PDR . YES X NO ___ Category: Proprietary ___ or CF Only ___
ACNW. YES ___ NO X Delete file after distribution Yes X No ___
LC YES ___ NO X

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PDR ADOCK 09000341
C PDR

FILE CENTER COPY

FORMER DLA/GSA PROPERTIES UNDER REVIEW BY NRC

1. GSA/FPPS-Buffalo, 'Buffalo, New York
2. Griffis Air Fcrce Base. Rome. HY
3. Curtis Bay Depot Bldgs K611 to 616 and K410 to 415, J521. 3621, J405, J406, 3410, F734, F735, 921
4. Naval Supply Depot, Great. Lakes. IL
5. Hammond Warehouse #2, Section D, Hammond Depot. Hammond, Indiana
6. GSA-FSS Erie Depot
7. Granite City Army Depot, Granite City, Illinois

Enclosure

DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
1745 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VIRGINIA 22202

IN REPLY REFER TO DNSC-O (Kevin Reilly/703-607-3227/jmp) 14 JAN 1994

SUBJECT: Radiological Status of Former Defense Logistics Agency/Defense National Stockpile Center Properties that have been Released Lor Unrestricted Use

Dr. Dominick A. Orlando, Project Manager
Decommissioning and Regulatory Issues Branch
Division of Low-Level Waste Management and Decommissioning
Office of Nuclear Material Safety and safeguards
U.S. Nuclear Regulatory Commission
Mail Stop 5E4
11555 Rockville pike
Rockville, MD 20652

Dear Mr. Orlando:

As requested in your letter of December 22. 1993, enclosed is the information we could locate regarding our former released sites. As ycu are aware, all of these sites were released while the Defense National Stockpile Center (DNSC) was part of the General Services Adninistracion. As of July 1988, the DNSC was transferred to the Defense Logistics Agency. In orde: co assist your review of these former sites I have enclosed all the documents we could locate and have provided a brief synopsis of the information contained in each enclosure.

1. GSA/FPRS Buffalo, Buffalo, NY - This location was used to store tungsten corcentrates and columbite/tantalite natural minerals. These materials were scored outside, in galvanized steel drums on the ground and asphalt pads. There materials were relocated to our Voorheesville, NY depot in May and June 1976. These materials were subsequently relocated co cur Scotia depot in 1990 (see letter Requesting the release of Voorheesville. dated April 24, 1992, in your possession). The drums were solid, in sound condition, with no leaks detected in either move and pose no radiological hazard to human health cr the environment. The area at the GSA/FSS site in Buffalo where these materials were stored is now developed into a residential ares.

2. Griffis Air Force Base, Rome, MY - See NRC close out survey dated 2 May 1986 enclosed.

3. Curtis Bay Depot, Curtis Bay, MD - See NRC close out survey

SUBJECT: Radiological Status of Former Deiense Logistics Agency/ Defense National Stockpile Center Properties that have been Released for Unrestricted Use

4. Naval Supply Depot, Great Lakes, IL - Several Tanks used to store monazite sand (2.5-3.5 percent ThO2). The material was sold in 1974. Decontamination of ranks performed in May 1975. Consultants review indicates all "Diminimous e Levles"(documentation provided). Tanks were subsequently remov d and scraped. The area where tanks vere is now a parking lot. Please note that the same procedure uas used to decontaminate the tanks at the Ravenna Depot, Ravenna, OH. These tanks have also been removed and scraped.

5. Hammond, Whse I-Section D - Inventory of thorium nitrate relocated to another warehouse early 1971. Due to leakage of containers, the storage area was decontaminated as described in the documents enclosed. A portion of the property (Whse 2 and others) war subsequently sold in 1972-73. The entire inventory of thorium nitrate was repackaged and overpackaged in early 1980 and remains in secure storage at Hammond.

6. GSA/FSS Erie Depot, Port Clinton, OH - This location was the storage area of vanadium oxide. The material was stored in sound steel drums. It war relocated to the DNSC Warren Depot, Warren, OH in 1982. In the Late 1980's analysis on the vanadium oxide showed this material was not licensable (less than .05% U and Th combined) and was subsequently removed from our license in total. All this material has been sold or upgraded over the last two years.

7. Granite City Army Depot, Granite City, IL - September 1977. all columbium/tantalum source material was relocated to the DNSC New Haven Depot, New haven, IN. The material is all in sound drums and no leaks or spills were encountered. Radiation report indicates negative findings.

Most Ot the items above were simple transfers of material from one licensed site to another licensed site. All of the materials (except the thorium nitrate) are naturally occurring radioactive ores and minerals thn: acer generally just licensable. Why you (NRC) did not receive some of this information after these actions were completed is something I can not answer. I do not feel there is or was a radioactive hazard during any ot these transfers or during the decontamination of the tanks or warehouse floors.

DNSC-O PACE 3
SUBJECT: Radiological Status of Former Defense Logistics Agency/ Defense National Stockpile Center Properties chat have been Released for Unrestricted Use

Please review the enclosed information and let me know if there is anything the DNSC can do to assist you in your review. Should you have any questions please feel free to contact me on 703-607-3227.

Enclosures (7)

F. KEVIN REILLY
Environmental Protection Specialist

DEFENSE LOGISTICS AGENCY
DEFENSE NATIONAL STOCKPILE CENTER
8725 JOHN J. KINGMAN ROAD, SUITE 3229
FT. BELVOIR, VIRGINIA 22060-6223

IN REPLY REFER TO DNSC-E

DEC 0 8 2005

U.S. Nuclear Regulatory Commission
Region 1, Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety
475 Allendale Road
King of Prussia, PA 19406-1415
ATTN: Betsy Ullrich

Dear Ms. Ullrich:

Re: License STC-133

SUBJECT: License Termination

As you are aware, the Defense National Stockpile Center (DNSC) of the Defense Logistics Agency (DLA) is in the process of closing out its depots across the country and seeking to terminate its U.S. Nuclear Regulatory Commission (NRC) license for those facilities. One of these facilities is the Hammond Depot, located at 3200 Sheffield Avenue in Hammond, Indiana. The purpose of this letter is to remind you of the results of prior Hammond Depot decommissioningactivities, as they pertain to a warehouse that is no longer part of the depot property, in the context of Historical Site Assessment (HSA) data (Attachment 1) for a depot warehouse with a somewhat similar inventory storage history. Some background follows:

Warehouse 2, as it was referred to formerly, is located on private property adjacent to the north boundary of the Hammond Depot, as depicted on the annotated a d layout(photo) labeled Figure 1. The property was formerly a part of the Hammond Depot, having been sold as excess property in the 1970s. The building dimensions are 201 ft by 1,006 ft(see middle building).

The *Oak* Ridge Institute for Science and Education(ORISE) noted in their HSA report(copy attached) that in 1968, all thorium nitrate drums on hand (2,472) were moved from Warehouse 2 to Warehouse 200E (currently on the Hammond Depot property). Early site documents indicate that more than 500 drums had leaked in Warehouse 2. Contamination was found on the floor and also on small areas outside the exterior doors on both sides of the building. Site personnel decontaminated the exterior areas and a contract was placed for decontaminating the floor by chipping, followed by disposal. In 1970, the floor area of Warehouse 2 was monitored and reported to not exceed 5,000 dpm/100 cm2 fixed alpha contamination and 1,000 dpm/100 cm2 removable alpha. The documentation reviewed during the HSA suggests that Warehouse 2 was surveyed and released according to the standards in effect at that time.

Thus, documentation reviewed during the H S A indicated that decontamination and surveys were performed in Warehouse 2 section D in 1970, and survey results at that time indicated that thorium levels were less than those specified in NRC guidelines

In late 1993 the NRC requested information about several properties formerly managed by DNSC, including Warehouse 2 (see Attachment 2). In 1994 DNSC delivered a formal response that included details of the decontamination of Warehouse 2 (see Attachment 3). No further communications have been identified.

We look forward to meeting with you and your Headquarters group to discuss a proposed Derived Concentration Guideline Level (DCGL) technical basis for our future Final Status Surveys at Hammond, IN and Curtis Bay, MD, and, of course, any other issues that may be of concern to you regarding our our planned actions. Michael Pecullan, of my staff, will be contacting you soon to set up this meeting for some time in January 2006.

Thanks for your assistance. Should you have any questions please feel free to contact me at 703-767-7620.

F/ KEVIN REILLY
Director, Directorate of Environmental Management

Attachments

General UCL Statistics for Full Data Sets

User Selected Options

From File	Y:\IEAV\Projects\0432 Hammond Depot\Final Status Survey\FSS Report\WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

C0

General Statistics

Number of Valid Observations	169	Number of Distinct Observations	140
Number of Missing Values	2		

Raw Statistics		Log-transformed Statistics
Minimum	-368	Log Sta stics Not Avaliable
Maximum	26837	
Mean	1456	
Median	118	
SD	3598	
Coefficient of Variation	2.47	
Skewness	3.884	

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test
Lilliefors Test Statistic	0.335	Not Available
Lilliefors Critical Value	0.0682	
Dam appear Normal at 5% Significance Level		

Assuming Normal Dibution		Assuming Lognormal Distribution	
95% Student's-tUCL	1914	95% KUCL	N/A
Assuming Normal Distribution		95% UCLs (Adjusted for Skewness)	
95% Student's-1UCL	1914	95% Adjusted-CLT UCL	2000
		95% Modified-t UCL	1928

Gamma Distribution Test	Data Distribution
Gamma Statistics Not Available	Data do not follow a Discernable Distribution (0.05)

Potential UCL to Use			
Use 95% Chebyshev (Mean. Sd) UCL	2663	95% CLT UCL	1912
		95% Jackknife UCL	1914
		95% Standard Bootstrap UCL	1899
		95% Bootstrap-t UCL	2038
		95% Hall's Bootstrap UCL	2040
		95% Percentile Bootstrap UCL	1916
		95% BCA Bootstrap UCL	2003
		95% Chebyshev(Mean, Sd) UCL	2663
		97.5% Chebyshev(Mean, Sd) UCL	3185
		99% Chebyshev(Mean, Sd) UCL	4210