



OCCUPATIONAL RADIATION PROTECTION PROGRAM ANNUAL SURVEY

NEW HAVEN DEPOT

AUGUST 25-27, 2003

Prepared by
Robert L. Skruck
Directorate of Environmental Management
DNSC-E

OCCUPATIONAL RADIATION PROTECTION PROGRAM SURVEY

NEW HAVEN DEPOT

EXECUTIVE SUMMARY

On August 25-27, 2003, Mr. Robert L. Skruck, Radiological Safety Officer, performed a survey of the radiological operations at the DNSC New Haven Depot in New Haven, IN. The results of the survey indicated that the depot had an effective Occupational Radiation Protection Program. Two (2) items were identified that did not meet the requirements of the DNSC Nuclear Regulatory Commission License or the DNSC ORPP and are identified in sections VII and XI of this report. Exposures for depot personnel have been maintain ALARA.

Implementation of the following recommendations will improve the overall management and regulatory compliance of the ORPP at New Haven.

- a. Each depot having licensable radioactive materials in storage will have on hand as a minimum, two instruments capable of detecting alpha radiation. New Haven only has the E-600 meter with SHP-380A probe. A second alpha meter is on order as of 8Aug03. [ORPP Section 4.4].
- b. Dispose of radioactive waste still on depot since July 2001. [ORPP Section 7]

DISCUSSION

I. ADMINISTRATION

Lois Huddlestun and Nikki Horther are designated as the Radiological Protection Officers (RPOs) here at New Haven Depot. Robert L. Skruck has been assigned as the Radiation Safety Officer (RSO) of this depot on January 15, 2003. Lois Huddlestun and Nikki Horther received the minimum 40 hours of radiation training in March 1997 and November 2002 respectively.

LICENSE

Radiological operations were authorized under NRC license STC-133, Amendment No. 24, issued May 5, 2003, expiring on February 28, 2010. The license authorizes the storage, sampling, repackaging and transfer of natural uranium and thorium mixtures as ores, concentrates and solids. The license was implemented under the DNSC ORPP manual dated December, 2002.

INVENTORY

The license authorizes the DNSC to possess a total of 2,000,000 kg of radioactive material in the form of uranium and thorium contained in ores, concentrates, and solids. Inventories at

specific locations were not limited. DNSC records dated August 12, 2003 indicate that the depot possessed a total of 1,009,133 pounds of Columbium/Tantalum(containing 514 kg uranium plus thorium) with a total of 0.29 curies and 53,172 pounds of Tungsten Scrap (containing 147 kg uranium with a total of 0.10 curies. The weights agree with depot records. A physical inventory was last conducted by Lois Huddleston on June 18, 2003. Inventory results were in agreement with records. A decommissioning file is in place and is acceptable per paragraph 4.11 of the ORPP, latest edition.

II. DOSIMETRY

Thermoluminescent dosimeters (TLD) are available for all employees with access to the radioactive materials; a supply is kept on hand for visitors. TLD's are supplied and analyzed by the U.S. Army Ionizing Radiation Dosimetry Center (USAIRDC) at the Redstone Arsenal. USAIRDC possess an NVLAP certification. All TLD's are stored in the administration building in the RPO's office and are issued to workers when they have to enter the restricted area, section 3 in warehouse 214.

The writer reviewed the results of the personnel monitoring for the past year. A total of 18 TLD's had been issued to personnel working at the depot. The monitoring results indicated that the exposures were below the 5.0 Rem annual limit specified by the ORPP. The range of recorded annual exposures was 0.000 to 0.037 Rem.

Each person issued a TLD had completed an exposure history (Form 1952). Copies were maintained by the RPO. Exposure records had been reviewed quarterly and the RPO provided each worker with an annual report for the previous year.

Internal dosimetry is not routinely performed due to the low dose rates and closed containers of Tantalum/Columbium and the Tungsten Scrap now stored at the New Haven Depot

PUBLIC DOSE COMPLIANCE

A total of 18 dose rate measurements were made at the perimeter of the depot which indicated that levels were at background. Therefore the annual dose to members of the public in the area outside the depot was zero. The property inside the depot fence is a controlled area. Section 3 in warehouse 214 is a restricted area.

Members of the public are not routinely present in the controlled area with the exception of the Depot Secretary at New Haven Depot. The annual dose for the Depot Secretary was calculated at 6.24 mrem per year which is within the allowable limits (100 mrem) noted in 10 CFR 20.1301. This was done by subtracting background (0.022 mR/hr) from the dose rate in the depot office which was 0.025 mR/hr and multiplying the net result (0.003 mR/hr) by a 40 hr. work week.

Annual dose for members of the public intermittently present in the controlled area was calculated at 0.21 mrem per year which is within the allowable limits This was accomplished by subtracting background (0.022 mR/hr) from the dose rate of 0.026 mR/hr taken at 1 meter outside section 3, warehouse 214. The net result (0.004 mR/hr) was multiplied by an occupancy factor of no more than 1 hr. per week to represent the activities of service workers.

III. TRAINING

The RSO has received the formal radiological safety classroom training required by the ORPP [section 17.1] and has also received training in DOT Regulations.

General worker training of depot employees and security personnel was accomplished by the RSO on Aug 26, 2003. The RSO maintained a detailed outline of the training topics presented during the class. Scope of the training met the requirements of the ORPP [section 17.2]. The RSO upon completion of this training shall notify the ORPM, in this report, of the names of all attendees at the meeting including security personnel.

IV. EMERGENCY RESPONSE

The depot has an Emergency Response Plan dated July 10, 2003. Emergency response personnel have been informed, by memo dated July 10, 2003, of the location of radioactive material stored at the depot. Material safety data sheets are maintained at the security office for an emergency.

V. RADIATION SURVEYS

The last annual survey conducted at this site was completed by Mr. William Till in July of 2002. In August 2002 an external audit was conducted by ERS Solutions, Inc. of Sacramento, CA.

Instrumentation used to perform this survey was an Eberline E-600 multi-purpose digital survey meter with a SSPA-3 probe. Measured dose rates are shown on the attached "Monitoring Summary" sheet.

<u>LOCATION</u>	<u>NUMBER OF READINGS</u>
Background	10
Depot fence line	18
1 meter from closed door exteriors	18
1 meter from Block Stack, Tant/Col.	8
1 foot from Block Stack, Tant/Col.	8
Rows between drums	10
Center of Aisles	10
Contact drums	20
1 meter from drums	20
3 meters from drums	10
6 meters from drums	10
Former Zirconium Ore (Contact)	5
Fence Surrounding Zirconium Ore	6
Tungsten Scrap at Contact	10
Depot Office Space	5

VI. RECEIPTS, SHIPMENTS, AND DISPOSAL

No receipts, shipments or disposals were made since the last annual survey.

VII. INSTRUMENTATION

The depot does not have an adequate supply of instrumentation on hand to comply with the ORPP. The depot has an Eberline Geiger Counter model E-520 , a Dosimeter Corp. model 5-0002 GM detector, and a model E-600 Multi-Purpose Survey Meter with SHP-380A and SPA-3 probes; Only one instrument (E-600 with SHP-380A probe) is capable of measuring alpha, two are required (See Recommendations). All calibrations had been accomplished within the allowable (every 365 days) time frames by Thermo Electron Company of West Columbia, SC. Cs-137 gamma check source and a Th-230 alpha check source are also on depot and calibrated per the manual and regulations.

Calibration Certificates were on file for all units at the New Haven Depot.

VIII. INCIDENTS

No incidents were reported since the last survey.

IX. STORAGE AREAS

Radioactive material, Columbium/Tantalum and Tungsten Scrap, is stored in warehouse 214, Section 3, Bays 15, 18, 9, 14, 34, 46, and 77. Section 3 is a secured with locks on all four rollup doors located on each side (north and south) of the section. The east fire wall (adjacent to section 4) contains two fire doors which are kept locked. The west firewall (adjacent to section 2) contains two fire doors which are kept closed but not locked. Due to the dose rates that are recorded from the Columbium/Tantalum exceeding 0.5 mR/hr, Section 3 in Building 214 is designated as a restricted area.

Radioactive (Zirconium Ore) was formerly stored at open area #7A. This material was sold and shipped in 2001 but this area has not yet been decontaminated. A decontamination project/contract has been issued.

X. POSTING

Copies of the Energy Reorganization Act of 1974 section 206, NRC Form 3, the license, operating procedures were posted in the depot office.

At the longitudinal centerline of each exterior wall (north & south) outside of section 3 one National Fire Protection Association (NFPA) sign with the radiation symbol and a stencil sign stating No Smoking Within 30 feet were posted. The exterior sides of all ten doors into the section are posted with a sign that states "Caution Radioactive Materials". The radioactive material in the section is marked/posted "Caution Radiation Hazard". A circular fence that surrounds the area of the former zirconium ore piles is posted intermittently "Caution Radioactive Materials".

XI. OTHER

A project to sample columbium-tantalum ore, currently stored in warehouse 214, occurred in CY2001. Two drums of waste material (maslin wipes and coveralls) were collected, surveyed and not disposed of in an approved disposal facility to date. This project concluded in July 2001 and the area was cleaned/cleared on 14 August 2001 by the RPO. See recommendations item #2.

The most recent audit of the New Haven radiation program was conducted by ERS Solutions, Inc. in August 2002. It concluded that the depot had an effective Occupational Radiation Protection Program. One burlap bag of Cb/Ta was over packed in a metal 30 gal. drum as recommended in that audit.

The NRC completed an inspection of the New Haven Depot radiation program April 2002. No violations and no recommendations were noted.

CONCLUSION

The ORPP, at the DNSC New Haven Depot, was effective. Implementing the following recommendations will improve the overall management and regulatory compliance.

1. Each depot having licensable radioactive materials in storage will have on hand as a minimum, two instruments capable of detecting alpha radiation. New Haven Depot only has the E-600 meter with SHP-380A probe. A second alpha meter is on order as of 8Aug03. [ORPP Section 4.4]
2. Dispose of the radioactive waste still on depot since July 2001. [ORPP Section 7]

ANNUAL RADIATION TRAINING AT NEW HAVEN DEPOT 2003 – ATTENDEES

Lois Huddlestun, GSS

Nikki Horther, GSS

William Till, GSS

Dale Arnos, Acting Eng. Equip. Supv.

Warren Flood, Eng. Equip. Supv.

Richard Whitman, Eng. Equip. Oper.

Snowden Hensley, Eng. Equip. Oper.

Brian Kilpatrick, Eng. Equip. Oper.

Scott Smith, Eng. Equip. Oper.

John M. Colgate, Security

Daniel L. Fogel, Security

Steven A. Langston, Security

Item	Question	Reference	Comments	R	O	I
001	Verify that the ORPM has designated a Depot RPO, in writing	ORPP 3.1	Lois Huddlestun & Nikki Horther are the designated RPOs in writing	X		
002	Certify that the RSO has extended the training program among depot personnel and continued training of old and new employees	ORPP 3.3	Twelve (12) depot/security employees were trained 8/26/03	X		
003	Verify that the RPO has the most recent copy of the ORPP	ORPP 4.1	Copy of ORPP on file at the depot	X		
004	Verify that the RPO has periodically reviewed all plans and procedures, maintained instruments, inspected records and materials in storage.	ORPP 4.1	Plans on file. Calibration by Thermo Electron.	X		
005	Verify that all personnel entering a restricted area completed a DD Form 1952, "Dosimeter Application And Record Of Occupational Radiation Exposure".	ORPP 4.2	DD Form 1952's are completed and on file.	X		
006	Verify that dosimetry results have been mailed to all non-DNSS personnel annually.	ORPP 4.2	Mailed when results come back from the Army	X		
007	Verify that a permanent record (DD 1141 or ADR) has been maintained for all potentially exposed individuals	ORPP 4.2	Records are on file in the radiation book, records are complete	X		
008	Verify that Section 206 of Public Law 93-438 "Energy Reorganization Act of 1974", NRC Form 3 "Notice To Employees", and the location of the NRC license are posted so as to be clearly visible.	ORPP 4.3	Posted inside the Depot Office		X	
009	Verify that the depot has at least 2 GM counters, 2 alpha counters, alpha & gamma check sources, and TLDs for each employee	ORPP 4.4	See equipment list. There are nine employees at the Depot and 18 TLD's		X	
010	Verify that sufficient TLDs are available for visitors	ORPP 4.4	Nine employees are issued TLD's, one is a control TLD, and eight for visitors		X	
011	Date of the last RSO survey	ORPP 4.5	Enter Date: July, 2002	X		
012	Verify that the RPO has reviewed and documented all exposure records quarterly	ORPP 4.6	Exposure records are reviewed and on file	X		
013	Verify that the RPO has notified each employee of his/her accumulated dose and obtained written acknowledgements from the employees that were placed in the depot records annually	ORPP 4.6	Annual/quarterly history of exposure are signed by each employee		X	

R = Records
 O = Personal observation
 I = Interview

Item	Question	Reference	Comments	R	O	I
014	Verify that the RPO monitored such operations as material handling, repackaging, spills, clean-ups, and/or any other operational activities relating to these materials, and maintain appropriate records of such operations.	ORPP 4.6	None since the last report.		X	
015	Verify that the RPO has coordinated any shipments and paperwork associated with the shipment including NRC Form 741.	ORPP 4.7	None since the last report.	X		
016	Cerify that radiation protection training has been provided at least once per fiscal year to depot employees	ORPP 4.8	Records are on file in the radiation book, records are complete	X		
017	Certify that the RSO notified the ORPM in writing of the names of all attendees at the training	ORPP 4.8	Sent in Radiation Survey Report conducted during 25-27Aug03.	X		
018	Verify that the layout of storage facilities minimizes exposure to ionizing radiation.	ORPP 5	All material is stored to minimize exposures and no shielding is required.		X	
019	Verify that prior to the beginning of a repackaging, relocation, or decontamination project, an assessment was made by the DNSC ORPP Manager, the radiological officers, and other stockpile personnel, to determine if there is a need for additional controls.	ORPP 5.1	None were planned in the past year.			X
020	Verify that where necessary shielding has been used to reduce exposures	ORPP 5.2	No shielding is required for New Haven Depot.		X	
021	Verify that Time, Distance, and Shielding have been used as necessary to reduce exposures to depot personnel	ORPP 5.2;5.3;5.4	Time and distance are utilized, shielding not required at this depot.		X	
022	Verify that the use of respirators has been in accordance with (IAW) DNSC Occupational Health Guidelines for Respiratory Protection	ORPP 5.5	Respirator guidelines were on file, dated 4/27/97.	X		
023	Verify that personnel using PPE have received appropriate training in the use and care of the PPE	ORPP 5.5	Training was accomplished on 15Jul03, nine people were trained.	X		
024	Verify that depot manager & RSO are cognizant of Precautionary Measures noted in the ORPP	ORPP 6	This subject was covered in the training materials			X
025	Verify that personnel are monitored during and after contact with licensed radioactive material	ORPP 6	No containers were opened since the last report.			X
026	Verify that any shipment of radioactive material, in the past year, has been in accordance with federal regulations	ORPP 6	No shipments since the last report.	X		

R = Records
O = Personal observation
I = Interview

Item	Question	Reference	Comments	R	O	I
027	Review waste shipments for the past year and verify that all shipments were properly labeled, stored, and shipped to a license disposal facility	ORPP 7	No waste shipments were made during the past three years.			X
028	Verify that postings, labeling, marking and placards are IAW ORPP requirements	ORPP 8.2	Posting, labeling, marking are per regulations		X	
029	Verify that areas with dose rates in excess of 5.0 mr/hr at any point are posted IAW 10 CFR 20.1902(a)	ORPP 8.3a	Areas are posted		X	
030	Verify that areas containing more than 1,000 microcuries of licensed material are posted with conspicuous signs IAW 10 CFR 20.1902(e)	ORPP 8.3b	Areas are posted		X	
031	Verify that no exposures have exceeded 5.0 Rem/yr	ORPP 9.1.1	Annual exposures range from 0.000 - 0.037 Rem.	X		
032	Verify through surveys and record review that the dose rate within a controlled area does not exceed 0.5 mr/hr	ORPP 9.1.2	Range of dose in the controlled area was less than 0.5 mR/hr.		X	
033	Verify that a restricted area has been established in those areas where the dose rate exceeds 0.5 mr/hr at one foot from the material	ORPP 9.1.2	Restricted area established.		X	
034	Verify that TLDs and pocket dosimeters are used by all personnel entering an area where thorium compounds are stored	ORPP 9.1.3	The radiation tally sheet, and reports of exposure are maintained.	X		
035	Verify that TLDs are used by all personnel entering a restricted area likely to receive an exposure in excess of 500 millirem in a year	ORPP 9.1.3	TLD # are recorded on the radiation tally sheet.	X		
036	Verify through surveys that the dose rate at the perimeter fence of the storage facility does not exceed background	ORPP 9.1.4	Range at the fence was background at 0.020 - 0.023 mR/hr.		X	
037	Verify that minors are not permitted into restricted areas	ORPP 9.1.5	There are no minors on the depot.			X
038	Verify that all female employees likely to receive an occupational dose, and all supervisors at NRC licensed sites, are given a copy of NRC Regulatory Guide 8.13, "Instructions Concerning Prenatal Radiation Exposure".	ORPP 9.1.6	Nikki Horther and Lois Huddleston received regulatory guide.			X
039	Review any declarations of pregnancy reported to the RPO for the past year for compliance with 10 CFR 20.1208	ORPP 9.1.6	None on file.	X		

Item	Question	Reference	Comments	R	O	I
040	Verify that the RPO has a current copy of federal and DLA regulations listed in Appendix B of the ORPP	ORPP 10	Copies on the web			X
041	Verify that the RPO has documented the location of licensed material and an inventory was performed within the past 365 days.	ORPP 11	Physical Inventory performed 18 June 2003.	X		
042	Verify that decommissioning has been performed IAW Reg Guide DG-4006 and Nuclear Material Management Safeguard System (NMSS) Guidance Document July 1982	ORPP 12	Decommissioning file exist at New Haven Depot.	X		
043	Verify that monitoring instruments have sufficient sensitivity and are capable of monitoring the types of radiation found at the depot.	ORPP 13.1	Equipment is acceptable, see recommendations in report.		X	
044	Verify that annual calibration of all monitoring instruments was accomplished.	ORPP 13.3	All equipment is calibrated.	X		
045	Verify that TLDs are received from the USAIRDC	ORPP 13.4	TLD's received monthly.		X	
046	Verify that emergency procedures have been developed and implemented by the manager of the depot	ORPP 14.1	A plan is on file dated 7/10/03.	X		
047	Verify that emergency procedures are reviewed and updated annually	ORPP 14.1	Reviewed by DNSC/OLHA.			X
048	Verify that prior arrangements have been made with local police and fire departments, hospitals, in-house and outside emergency squads and other medical facilities. Evacuation routes and assembly points should be designated.	ORPP 14.2	Letter to the New Haven Fire Department dated 5/17/03	X		
049	Verify that the RPO maintains documentation of meetings/contacts with outside agencies	ORPP 14.2	Documents on file for NRC inspection dated 17 April 2002.	X		
050	Verify that a pre-employment and annual medical examination program for stockpile employees potentially exposed to hazardous and radioactive materials have been provided	ORPP 15	Health and Safety Manager/employees receive physicals Occ. Health Ft. Wayne.			X

Item	Question	Reference	Comments	R	O	I
051	Verify that the depot RPO has established a Radiological Data Book containing license data, exposure data, calibration data, the DNSSC ORPP and all other documents related to the source material at the site. Included shall be written records of quarterly exposure reviews, annual radiation exposure notifications, and initial and annual radiation safety training	ORPP 16.2	The data is on file in the Depot Radiation Library in conference room.		X	
052	Verify that personnel dosimetry records are maintained IAW DLAD 5025.30	ORPP 16.3	Records are on file.	X		
053	Verify that each RPO has been provided 40 hours of formal classroom training that includes the fundamentals of ionizing radiation, its characteristics, and appropriate units of measure, evaluation techniques, instrumentation, biological effects, NRC Regulations, and control measures.	ORPP 17.1	Depot RPOs trained in Mar. 97 and Nov. 02, see report.	X		
054	Verify that the RPO has received training in DOT regulations	ORPP 17.1	DOT Training in RPO's records.	X		
055	Verify that all depot personnel (except clerical staff) have received annual training which includes potential hazards, precautions to minimize exposure, work practices and operating procedures, personal hygiene, information contained in NRC Regulatory Guide 8.13, and use of personal protective clothing and equipment.	ORPP 17.2	Training was completed 8/26/03.	X		
056	Certify that the RSO developed and maintained a detailed site specific training outline and maintained attendance rosters for each training session	ORPP 17.2	Training outline and roster is on file at New Haven complete 25-27Aug03.	X		
057	Verify that security personnel who may encounter radiological hazards are properly instructed annually	ORPP 17.3	Security personnel were trained.	X		

DNSC 10 CFR
Checklist

Item	Reference	Question	Y	N	N/A	Comments
A	STC-133	Quantities (Ci & kg U + Th) in storage?				NEW HAVEN DEPOT, NEW HAVEN, IN
		<u>Radiation Protection Programs</u>				
B	20.1101	(b) Are procedures & engineering controls in place for ALARA	X			
		(d) Are the provisions in the radiation protection manual being implemented	X			
		<u>Occupational Dose Limits for Adults</u>				
C	20.1201	(a)(1)				
		(i) Are radiation workers TEDE < 5 rem/year	X			
		(d) Were there any DAC & ALI assigned exposures		X		
		(f) Was any radiation worker employed outside the organization	X			Kanorado/Rubber project.
		If so, did the employee receive any occupational exposure	X			0.037 rem
		<u>Compliance with Requirements to Sum External & Internal Doses</u>				
D	20.1202	(b)(c)(d) Did any exposure occur due to an assigned or measured inhalation, ingestion or skin absorption uptake		X		
		If so, was there any uptake, either assigned or measured		X		
		<u>Determination of External Dose from Airborne RAM</u>				
E	20.1203	Were DDE, eye DE & shallow DE exposure included in a dose from airborne RAM			X	
		<u>Planned Special Exposures</u>				
F	20.1206	Did a planned special exposure occur		X		
		<u>Occupational Dose Limits for Minors</u>				
G	20.1207	Were any minors (< 18 years old) employed		X		
		If so, was the TEDE < 500 mrem/year			X	
		<u>Dose to an Embryo/Fetus</u>				
H	20.1208	Did any female worker voluntarily inform her supervisor/RPO of her pregnancy, in writing, to include date of conception		X		Two females in the program (Nikki Horther & Lois Huddlestun)
		(a) If yes, did licensee take action to ensure that the dose to the embryo/fetus was < 500 mrem during entire pregnancy			X	
		(b) Did licensee maintain a uniform monthly exposure rate			X	
		(c) Was dose to embryo/fetus summed using the deep DE & CDE to both the embryo/fetus & the woman			X	
		<u>Dose Limits for Individual Members of the Public</u>				
I	20.1301	(a)(1) Was the TEDE to individuals of the public < 100 mrem	X			
		(2) Was the dose in an unrestricted area < 2 mrem/hour	X			
		(b) Did any member of the public have access to a controlled area	X			
		(d) Did licensee request a dose limit increase for any member of the public		X		

DNSC 10 CFR
Checklist

Item	Reference	Question	Y	N	N/A	Comments
J	20.1302	Compliance with Dose Limits for Individual Members of the Public				
		(a) Was survey made of radiation levels in unrestricted & controlled areas	X			
		Were there any radioactive effluents		X		
		(b) Did survey show compliance with annual dose limits	X			
K	20.1501	(c) Did survey show dose rate from external sources in an unrestricted area to be < 2 mrem/hour and < 50 mrem/year		X		
		Surveys and Monitoring				
		(a) Does survey evaluate radiation levels & quantities of RAM	X			
		(b) Are instruments calibrated at least annually	X			
L	20.1502	(c) Are TLDs NAVLAP accredited	X			
		Conditions Requiring Individual Monitoring				
		(a)(1) Are radiation workers likely to receive a dose > 10% of limits in 20.1201		X		
		If yes, are they provided monitoring devices			X	
		(2) Are minors and declared pregnant women likely to receive a dose > 10% of limits in 20.1207 or 20.1208			X	
		If yes, are they provided monitoring devices			X	
		(3) Are radiation workers likely to enter a high radiation area		X		
		If yes, are they provided monitoring devices			X	
M	20.1701	(b)(1) Are radiation workers likely to receive an intake > !0% ALIs		X		
		(2) Are minors and declared pregnant women likely to receive a CEDE > 50 mrem			X	
		If yes, are they provided monitoring devices			X	
		Respiratory Protection and Controls				
N	20.1801	(1) Does the licensee possess RAM that could become airborne	X			
		(2) If yes, does the licensee have a complete respiratory protection program as required in 20.1703	X			
O	20.1901	Security of Stored Material				
		Are stored licensed materials in controlled or unrestricted areas secured from unauthorized removal	X			
P	20.1902	Caution Signs				
		(a) Is licensee using the standard radiation symbol	X			
P	20.1902	Posting Requirements				
		(a) Is a radiation area properly posted	X			
		(e) Is an area > 10 times the quantity of material specified in Appendix C posted with Caution – Radioactive Materials	X			

DNSC 10 CFR
Checklist

Item	Reference	Question	Y	N	N/A	Comments
		<u>Labeling Containers</u>				
Q	20.1904	(a) Is each container of licensed material labeled – Caution Radioactive Material & radionuclide, quantity, date, and radioactivity determined, radiation level, and kind of material		X		
		<u>Exemptions to Labeling Requirements</u>				
R	20.1905	(e) Are containers accessible only to individuals authorized to handle If yes, is there a written record of the material readily available	X			
		<u>Waste Disposal</u>				
S	20.2001	(a) Was any radioactive material disposed of (b)(4) Was receiving activity licensed to receive the waste		X		
		<u>Transfer for Disposal and Manifests</u>				
T	20.2006	(a) Was any RAM transferred to a land disposal facility (b) If yes, was a shipment manifest prepared		X		
		<u>Records</u>				
U	20.2101	(a)(b) Are records kept in appropriate & distinct units	X			
		<u>Records of Radiation Protection Programs</u>				
V	20.2102	(a)(1) Is a copy of the ORRP on hand (2) Are audits conducted and available (3 years) for review	X			
		<u>Records of Surveys</u>				
W	20.2103	(a) Are survey and calibration records retained for 3 years	X			
		<u>Determination of Prior Occupational Dose</u>				
X	20.2104	(a)(1) Are current records of occupational radiation dose on file (2) Is a lifetime occupational radiation dose on file	X			
		<u>Records of Individual Monitoring Results</u>				
Y	20.2106	(a) Are the appropriate dose records maintained for each rad worker (b) Are the records updated at least annually (c) Are the records maintained on NRC form 5 or equivalent	X	X	X	
		<u>Records of Dose to Individual Members of the Public</u>				
Z	20.2107	(a) Are any members of the public exposed to ionizing radiation (b) If yes, are records maintained to demonstrate compliance	X		X	Occasional visitors to depot; exposure <0.5 Mr/hr short term
		<u>Records of Waste Disposal</u>				
AA	20.2108	(a) Were any radionuclides disposed of (b) If yes, do adequate records exist		X	X	
		<u>Form of Records</u>				
BB	20.211	Are records legible & safeguarded against tampering & loss	X			
		<u>Reports of Theft or Loss of Licensed Material</u>				
CC	20.2201	Has any licensed material been lost or stolen (a)(b) If yes, have the conditions in these paragraphs been met		X	X	

INSTRUMENTATION

Location: NEW HAVEN DEPOT
NEW HAVEN, INDIANA

Date: August 25-27, 2003

X	Instrument	Serial No.	Probe											Condition		Calibration Certificate		Calibration Date		
			HP-270	SPA-3	SHP400	SABP-100	SSPA-3	SHP-380A	SHP-270	SHP-360	SHP-380AB	AC-3	Other	OK	NG	Y	N			
			γ	γ	γ	αβ	γ	α	γ	β	αβ	α								
	E-120																			
X	E-520	3135													X	X		X		19-Nov-02
X	E-600 Multi-Purpose Survey Meter (Digital)	1883					X	X							X			X		20-Feb-03
X	Dosimeter Corp. Model 5-0002	5-0002													X	X		X		20-Nov-02
	Ludlum Mod. 2																			
	ASP-1 Multi-Purpose Survey Meter (Analog)																			
	ASP-2 Multi-Purpose Survey Meter (Digital)																			
	CDV-750 Charger																			n/a
	CDV-750 Charger																			n/a
	CDV-138 Pocket Dosimeter																			n/a
X	Panasonic TLD's	18 Units													X					n/a

	Check Source	Activity (μCi)	Type	S/N	Manufacturer	Calibration Date
	Am-241		α			
	Co-60		γ			
X	Cs-137	4.938 uCi	γ	948-84	Isotope Products	15-Dec-02
	Tc-99		β			
X	Th-230	.9797 Nci	α	A8-528	Isotope Products	1-Dec-02