

# ACCEPTANCE REVIEW MEMO (ARM)

**Licensee:** Unitech Services Group, Inc.      **License No.:** 53-13668-01  
**Docket No.:** 030-06869      **Mail Control No.:** 471472  
**Type of Action:** Decom      **Date of Requested Action:** 08-16-07  
**Reviewer Assigned:**      **ARM reviewer(s):** Torres

Response	Deficiencies Noted During Acceptance Review
	[ ] Open ended possession limits. Limit possession. Submit inventory. [ ] Submit copies of most recent leak test results. [ ] Add - delete IC license condition. Add IC paragraph in cover letter. [ ] Split license from cover letter. Add SUNSI marking to license. [ ] Ask the licensee if they have any type-amount of EPAct Material.

**Reviewer's Initials:** \_\_\_\_\_

**Date:** \_\_\_\_\_

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Unrestricted release Group 2 or >: Transfer memo to FCDB within 10 days.
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Decommissioning notification should be completed within 30 days.
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Termination request < 90 days from date of expiration
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Expedite (medical emergency, no RSO, location of use/storage not on license, RAM in possession not on license, other)
<input type="checkbox"/> Yes	<input type="checkbox"/> No	TAR needed to complete action.
<b>Branch Chief's and/or Sr. HP's Initials:</b> <u>RTZ</u>		<b>Date:</b> <u>8/28/07</u>

## SUNSI Screening according to RIS 2005-31

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>Non-Publicly Available, Sensitive</b> if <u>any</u> item below is checked
General guidance:		
_____	RAM = or > than Category 3 (Table 1, RIS 2005-31), use Unity Rule	
_____	Exact location of RAM (whether = or > than Category 3 or not)	
_____	Design of structure and/or equipment (site specific)	
_____	Information on nearby facilities	
_____	Detailed design drawings and/or performance information	
_____	Emergency planning and/or fire protection systems	
_____	<del>Decommissioning (proposed)</del>	
Specific guidance for medical, industrial and academic (above Category 3):		
_____	RAM quantities and inventory	
_____	Manufacturer's name and model number of sealed sources & devices	
_____	Site drawings with exact location of RAM, description of facility	
_____	RAM security program information (locks, alarms, etc.)	
_____	Emergency Plan specifics (routes to/from RAM, response to security events)	
_____	Vulnerability/security assessment/accident-safety analysis/risk assess	
_____	Mailing lists related to security response	
<b>Branch Chief's and/or Sr. HP's Initials:</b> <u>RTZ</u>		<b>Date:</b> <u>AUG 28 2007</u>

## Pre-Licensing Screening

### Applicant Information:

Control No. 471472

Name: Unitech Services Group, Inc.	Type of Request: Decommissioning Program Code(s):
Location: MA	License No.: 53-13668-01      Docket No.: 030-06869

### STEP 1—Radioactive Materials and Quantities Requested:

<b>Instructions for Step 1: Complete Step 1 for all applications.</b> If all your responses in Step 1 are "No" then do not complete Step 2 (Screening Criteria). Sign and date the completed step-sheet and add it as the sensitive and non-publicly available OAR in ADAMS. If a "yes" response is indicated for any item in Step 1, also complete Step 2. If the type of use is subject to a Security Order or the requirements for increased controls, complete Step 3 (Item A or Item B) without delay.	Yes or No
A. The request is from a new applicant.	No
B. NUREG-1556, Volume 20, Section 4.9 indicates a licensing site visit is needed for the requested type of use, e.g., (1) Type A broad scope license, (2) panoramic irradiator containing > 10000 curies, (3) manufacturers or distributors using unsealed radioactive material or significant quantities of sealed material, (4) radioactive waste brokers, (5) radioactive waste incinerators, (6) commercial nuclear laundries, and (7) any other application that in the judgement of the reviewer and cognizant supervisor involves complex technical issues, complex safety questions, or unprecedented issues that warrant a site visit.	No
C. The applicant requested certain radionuclides and quantities that equal or exceed the Risk Significant Quantity (TBq) values in the table, below, that have been "highlighted" by the reviewer	No

### Table of Risk Significant Quantities

(Category 2 Quantities, IAEA Safety Guide No. RS-G-1.9, Categorization of Radioactive Sources, August 2005)

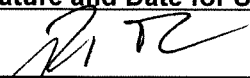
Radionuclide	Risk Significant Quantity (TBq <sup>1</sup> )	Risk Significant Quantity (Ci <sup>1</sup> )	Radionuclide	Risk Significant Quantity (TBq <sup>1</sup> )	Risk Significant Quantity (Ci <sup>1</sup> )
Am-241	0.6	16	Pm-147	400	11,000
Am-241/Be	0.6	16	Pu-238	0.6	16
Cf-252	0.2	5.4	Pu-239/Be	0.6	16
Cm-244	0.5	14	Ra-226 <sup>2</sup>	0.4	11
Co-60	0.3	8.1	Se-75	2	54
Cs-137	1	27	Sr-90 (Y-90)	10	270
Gd-153	10	270	Tm-170	200	5,400
Ir-192	0.8	22	Yb-169	3	81

<sup>1</sup> The primary values are TBq. The curie (Ci) values are for informational purposes only.

<sup>2</sup> The Atomic Energy Act, as amended by the Energy Policy Act of 2005, authorizes NRC to regulate Ra-226 and NRC is in the process of amending its regulations for discrete sources of Ra-226.

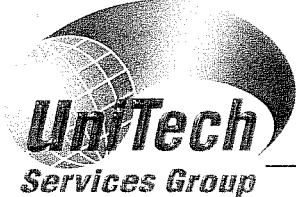
Calculations of the Total Activity or the Unity Rule are attached to document whether or not the screening criteria in Step 2 were also completed to evaluate the application. <b>NOTE—If an amendment of an existing license is being requested, the calculations will include the previously authorized quantities for the radionuclide(s).</b>	Yes, No, or Not Applicable (NA)
Total Activity—multiple activities are requested for a single radionuclide and the sum of the activities equals or exceeds the quantity of concern for the radionuclide	—
Unity Rule—multiple radionuclides are requested and the sum of the ratios equals or exceeds unity, e.g., [(total activity for radionuclide A) ÷ (risk significant quantity for radionuclide A)] + [(total activity for radionuclide B) ÷ (risk significant quantity for radionuclide B)] ≥ 1.0.	—

### Signature and Date for Step 1:



AUG 28 2007

License Reviewer and Date



August 16, 2007

Mr. Roberto J. Torres  
Senior Health Physicist  
Nuclear Materials Licensing Section  
U.S. Nuclear Regulatory Commission, Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

Re: License No. 53-13668-01 - Notice of Decommissioning Activities Pursuant to Title 10 Code of Federal Regulations (CFR) 30.36(d) and License Amendment Request

Dear Mr. Torres,

Thank you for taking the time to discuss the referenced matter on 13 August 2007. UniTech Services Group, Inc. (UniTech) appreciates your time and that of your colleague in the decommissioning section. The intent of this letter is to notify the Commission of UniTech's decision to permanently cease activities authorized under the license. The only future activities will be to decommission the facility to render it acceptable for unrestricted use.

I have carefully reviewed the license commitments, particularly Appendix F, and the regulations, particularly §30.36(g)(1). It is UniTech's view that all decommissioning work, with one possible exception discussed below, may proceed in accordance with the existing license. UniTech understands that formal approval of a subsequent decommissioning plan usually takes 12 months, optimally 6 to 8 months. For that reason, UniTech wishes to incorporate the one potential work task, not currently included into Appendix F, into this license amendment request. That potential task involves washer trench and pit removal and is discussed in greater detail below.

Facility Status

Based on numerous and frequent detailed facility surveys performed over many years of operations<sup>1</sup>, once cleaned subsequent to laundry operations, the facility is generally maintained at or below the clean area contamination limits established in the license. The only exceptions to this statement involve areas not routinely accessible and inside equipment (limited to washers, dryers, air and wastewater handling equipment) and the washer trench and pits.

Discharges of air and water have routinely been a small fraction of regulatory limits. Concentrations of airborne radioactivity within the plant have been a small fraction of Derived Air Concentration (DAC) values.

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<sup>1</sup> UniTech began operations at this location on February 12, 1974.

No 4 7 1 4 7 2

Certified Department of Transportation (DOT) shipping papers have indicated that Co-60 has been the primary radionuclide handled at the facility. Detailed gamma spectroscopy and radiochemistry analysis has confirmed that Co-60 is the primary nuclide (>90%) present in the residue from the wastewater filtration system. There has been no change in customers since this analysis was conducted. The only customer processed at the facility has been the United States Navy. Activities processed for many years have been minimal. Laundry has generally been manifest as DOT exempt; non-radioactive for transportation purposes. In a typical year, the facility would process approximately 8 shipments, each of which contained, at maximum, several hundred pounds of laundry.

#### License Clarifications / Amendments

Mr. Glenn Roberts, will assume the responsibilities of Decommissioning RSO. A resume has been provided as page E15 of the current license.

Mr. Rob Krakan, current RSO, will be available on call in the event the security monitoring service receives an alarm when the facility is unattended. This arrangement may be discontinued once all known and suspected radioactive material and contaminated equipment has been removed from the facility.

All radioactive controls established in the license shall be maintained throughout the decommissioning process. These controls include contamination control, personnel dosimetry and bioassay, postings, air and water monitoring, facility surveys, and access control. Circumstances particular to and required by the decommissioning process are noted below.

Area designations may be changed based on measured and documented contamination levels commensurate with criteria established in the license; see page D2, Section II.E. Planned work tasks will also be considered. For example, although contamination levels in the washroom support downgrading the area classification, the area will be controlled as a contaminated area during removal of washers, dryers, air filtration and wastewater processing equipment. In addition, current contamination control areas (designated as contaminated or potentially contaminated) will not be designated as clean areas until all radioactive materials and contaminated equipment are effectively contained (packaged in a securely closed proper DOT shipping container) and areas decontaminated as confirmed by survey.

The plant air sample system shall be maintained until all potential for airborne radioactivity is minimized. Once removed, localized air samples will be collected as necessary for isolated work with the potential of generating airborne radioactivity.

The plant air filtration system shall be maintained until exhaust ventilation is no longer necessary. A portable HEPA filtration unit may also be used for localized work tasks. Note that plant air samples shall continue to be collected as indicated above.

Once the waste water pits have been initially cleaned in preparation for decontamination, there functional use may be discontinued. Water may be transferred to holding tanks to function in their place. All water shall be filtered and monitored prior to discharge. In this manner, the functional flow path described in Appendix C shall be maintained throughout the decommissioning process.

Notwithstanding provisions of the license application, Table F-1, page F5, UniTech establishes the following limits and goals for unrestricted release of the facility.

Nuclide	Total (dpm/100cm <sup>2</sup> )		Removable (dpm/100cm <sup>2</sup> )	
	Limit	ALARA Goal	Limit	ALARA Goal
Co-60	7100	710	710	71

<sup>1</sup>All individual measurements expected to meet the limit preliminarily established as both DCGL<sub>W</sub> and DCGL<sub>EMC</sub>. Formal evaluation shall be conducted in the unlikely event the DCGL<sub>EMC</sub> requires modification.

<sup>2</sup>Satisfaction of the stated ALARA goal is sufficient demonstration of satisfaction of the ALARA decommissioning criteria.

<sup>3</sup>Values based on NUREG-1757, Consolidated NMSS Decommissioning Guidance, Decommissioning Process for Materials Licensees, Volume I, Rev. 1, Appendix B, Table B.1.

<sup>4</sup>Adjustments shall be made for other trace nuclides commensurate MARSSIM methodology and NUREG-1757.

UniTech wishes to modify a sentence in the license application, Appendix F, page F4, second paragraph, second sentence. It should read: *"The areas to be scaled will be kept continuously wet or localized exhaust ventilation shall be provided."* [Emphasis added for clarity.] Exhaust ventilation is a common feature on such equipment. The exhaust shall be routed to the air filtration system or a portable HEPA filtration unit.

It is not unusual for UniTech, as a company, to conduct spot decontamination of floors using equipment that removes a superficial layer (as little as approximately 1/32 of an inch) up to ¼ inch of the concrete surface per pass. This operation has been routine enough for UniTech to purchase such equipment. The equipment is equipped with its own HEPA filtration unit. If used during the project it will likely be an elective ALARA measure and not necessary to meet the radiological criteria specified above. Measurements of airborne radioactivity shall be collected during floor surface removal.

UniTech desires to leave the pits in place for structural reasons. It is UniTech's intent to decontaminate trench and pit surfaces to the criteria specified above and then fill the structures to floor level, including a concrete finished surface. Since such surfaces will not ultimately be accessible, nor effectively contribute to any residual dose, UniTech need only meet the Total [contamination] Limits for these surfaces. The ALARA Goal need not apply. The trench and pits shall not be filled without prior notice to the NRC sufficient to allow reasonable time for independent measurement.

In the unlikely event that trench and / or pit removal is determined necessary, UniTech wishes to incorporate such work tasks into this amendment. UniTech has experience in conducting such work during past decommissioning projects. Prior to removal, the surfaces shall be essentially free of removable contamination; with certainty below the limits established above. The radiological hazards of such work are minimal. The only radiological safety commitment necessary is that concrete cutting operations shall be conducted in a wet environment; essential for equipment operation irrespective of the radiological nature of the work. In addition, measurements of airborne radioactivity shall be collected during concrete cutting. Such excavation, if any, would not be conducted within the next 90 days, allowing the Commission ample time to review this request.

Anticipated Decommissioning Time Line


Project Commencement	Mid-October, 2007
Project Completion	April, 2008
Final Status Survey Report	June, 2008

UniTech respectfully requests any attention the Commission may devote to support this schedule. The actual work is expected to be conducted during three or four two-week work cycles. UniTech shall keep the designated decommissioning staff member advised of planned visit, work plans, and progress, in order to facilitate on-site visits.

Please contact me at your earliest convenience if you have any questions. I may be reached at 610-948-9700, extension 19, and by email at [GRoberts@UniTech.ws](mailto:GRoberts@UniTech.ws).

Sincerely,

UniTech Services Group, Inc.



Glenn Roberts  
Health Physicist

cc: Michael R. Fuller, Esq., Manager, Health Physics and Engineering  
Rob Krakan, UniTech, Honolulu



From: Origin ID: PNEA (610)948-9700  
Glenn Roberts  
UniTech Services Group, Inc  
401 North Third Avenue

Royersford, PA 19468



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Ship Date: 17AUG07  
ActWgt: 1 LB  
System#: 1913264/INET2600  
Account#: S \*\*\*\*\*

Delivery Address Bar Code



Ref #  
Invoice #  
PO #  
Dept #

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SHIP TO: (817)860-8188

BILL SENDER

**Roberto Torres**  
**US NRC, Region IV**  
**Materials Licensing**  
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**Arlington, TX 760118604**

TRK# 7996 9575 2604  
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TUE - 21AUG  
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