

**ATTACHMENT A**

**D&D Procedure Cover Page**

**CHARACTERIZATION/LICENSE PROCEDURE**

<b>ISOLATION AND CONTROL FOR FINAL RADIATION SURVEY</b>
<b>ZS-LT-300-001-003</b>
Revision No. 2

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<b>Regulatory Required Reviews (per AD-11, "Regulatory Reviews")</b>	
Part 72 ISFSI Impact License: 10 CFR 72.48	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Part 50 License: 10 CFR 50.59 and 50.90	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Fire Protection: 10 CFR 50.48(f)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Conditions of License: E-Plan: 10 CFR 50.54(q)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
QA Review Required? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
QA Reviewer: _____	DATE: _____
Print Name / Signature	
Technical Review Required? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
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Print Name / Signature	
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Print Name / Signature	
<b>Approval Section</b>	
DEPARTMENT MANAGER: _____	DATE: <u>10/15/15</u>
RF Yetter / Signature	
DECOMMISSIONING PLANT MANAGER*: _____	DATE: _____
Print Name / Signature	
* Required for Technical Reviews only	

Effective Date: 10/16/15 (entered by Document Control later)

Summary of Changes in this Revision:

- Rev. 2 – Addressed Basement STS turnover to contractor/D&D for continued site demolition and remediation, defined actions for surveillance of FRS completed areas, modified forms to include Print/Sign for Name, and changed responsibility for access control from C/LT Manager to C/FRS Supervisors.

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## 1. **PURPOSE AND SCOPE**

### 1.1. **Purpose**

This procedure defines the turnover, isolation and control process for areas being released for the Final Radiation Survey (FRS) of structures, systems and open land areas after planned decommissioning activities are completed at Zion Station Restoration Project (ZSRP). It also provides the administrative process to evaluate, approve, and document decommissioning or maintenance related activities in areas during and following FRS activities.

Because of differences in the conceptual models and required source terms, the FRS includes two different approaches depending on the media; (1) Final Status Survey (FSS) is conducted on soil, buried piping and groundwater to demonstrate that residual radionuclide concentrations are equal to or below site-specific Derived Concentration Guideline Levels (DCGL), and (2) a “Source Term Survey” (STS) is conducted to demonstrate that the inventory of residual radioactivity in building basements, embedded piping and penetrations is below a source term inventory commensurate with the dose criterion in 10 CFR 20.1402.

The term “FRS” is used in this procedure to represent both the FSS and STS surveys. When only one of the survey methods is being addressed, either FSS or STS is specifically referenced.

Survey area, as addressed in this procedure, can include one or several survey units.

### 1.2. **Scope**

Planned decommissioning actions must be completed and assessed for isolation and control measures before FRS activities can begin in a designated area. This procedure describes the protocols used to verify and document that an area is in suitable physical condition for FRS implementation and proper isolation and control measures are in place to limit the potential for cross-contamination from other decommissioning activities and to maintain the final configuration of the area.

This procedure applies to all personnel performing turnover and control activities in support of FRS.

## 2. **RESPONSIBILITIES**

### 2.1. **Characterization/License Termination (C/LT) Manager – is responsible for:**

- Providing technical oversight and administration of this procedure.
- Assessing and approving any decommissioning or maintenance related activities in survey units during and following FRS activities.

### 2.2. **Vice-President D&D/Construction (or designee) – is responsible for:**

- Ensuring any necessary decommissioning or remediation activities in the area are completed.

- Ensuring housekeeping is performed, any tools or equipment not required to support survey activities are removed, and any additional measures necessary to limit the spread of contamination from adjacent areas are implemented.

**2.3. Radiological Engineers (RE) – are responsible for:**

- Reviewing the existing radiological survey data [Characterization, Surveillances, Radiological Assessments (RA), Remedial Action Support Surveys (RASS)] for the survey unit to ensure sufficient data is available to proceed with a FRS design.
- Providing direction as to the content and extent of the RA/RASS survey performed for area turnover.
- Determining the frequency and type of surveillances that will be performed in survey units following the performance of FRS and prior to license termination.

**2.4. Characterization/Final Radiation Survey (C/FRS) Supervisor(s) – are responsible for:**

- Maintaining cognizance of areas nearing decommissioning completion.
- Ensuring decommissioning or remediation activities in areas deemed ready for FRS are complete and initiating the turnover process.
- Verifying that survey units to be surveyed for FRS are isolated, posted and controlled.
- Reviewing and approving RA/RASS surveys completed for area turnover.
- Ensuring access control measures are maintained for area(s) where FRS activities are active until the area(s) are released from the license.

**2.5. Graphics/GPS Specialist – is responsible for:**

- Preparation of drawings and other graphics as necessary to be included with the RA/RASS survey(s) performed for area turnover.
- Generation of maps/drawings for surveillances per the RE.

**2.6. Characterization/Final Radiation Survey (C/FRS) Technicians – are responsible for:**

- Performing surveys and sampling when directed by C/FRS Supervisor.
- Establishing area isolation and control measures prior to and during FRS activities.
- Maintaining access control measures in areas where FRS activities are being or have been performed.
- Maintaining a log of personnel entering posted areas.

**2.7. All Project Personnel – are responsible for:**

- Reading and adhering to FRS postings and ensuring the integrity of FRS controls.

### 3. **DEFINITIONS**

- 3.1 **Access Control** - Application of programs and/or policies designed to ensure that survey areas are not re-contaminated by personnel or decommissioning activities.
- 3.2 **Final Radiation Survey (FRS)** – Measurements and sampling to describe the radiological conditions of a site, following completion of decontamination activities (if any) in preparation for release.
- 3.3 **Final Status Survey (FSS)** – FRS conducted on soil, buried piping and groundwater to demonstrate that residual radionuclide concentrations are equal to or below site-specific DCGLs.
- 3.4 **Source Term Survey (STS)** – FRS conducted to demonstrate that the inventory of residual radioactivity in building basements, embedded piping and penetrations is below a source term inventory commensurate with the dose criterion in 10 CFR 20.1402.
- 3.5 **Turnover** - Acknowledgement of all involved project personnel that a system, structure, or open land survey unit meets all the physical and radiological conditions necessary for the Characterization/License Termination group to perform FRS.

#### 3.6 **Acronyms**

<b><u>ALARA</u></b>	As Low As Reasonably Achievable
<b><u>C/FRS</u></b>	Characterization/Final Radiation Survey
<b><u>C/LT</u></b>	Characterization/License Termination
<b><u>DCGL</u></b>	Derived Concentration Guideline Level
<b><u>FRS</u></b>	Final Radiation Survey
<b><u>FSS</u></b>	Final Status Survey
<b><u>ISOCS</u></b>	<i>In-Situ</i> Object Counting System
<b><u>QAPP</u></b>	Quality Assurance Project Plan
<b><u>RA</u></b>	Radiological Assessment
<b><u>RASS</u></b>	Remedial Action Support Survey
<b><u>RE</u></b>	Radiological Engineer
<b><u>STS</u></b>	Source Term Survey
<b><u>ZSRP</u></b>	Zion Station Restoration Project

### 4. **PRECAUTIONS, LIMITATIONS, AND PREREREQUISITES**

#### 4.1. **Precautions**

- 4.1.1 Isolation and control measures are implemented to ensure that the final radiological and physical condition of a FRS survey area is not compromised and/or re-contaminated from access by personnel or equipment, or impacted by on-going decommissioning activities.

- 4.1.2 FRS survey area(s) shall be posted with signs instructing individuals to contact the Site Characterization/License Termination group prior to entering or conducting work activities in the area.
- 4.1.3 Scan surveys performed for area turnover should focus on sections which had been contaminated, remediated, or have been in direct contact with radioactive materials.
- 4.1.4 When a land area has been turned over for FRS, no radioactive material shall be introduced and/or demolition activities allowed.

#### **4.2. Limitations**

- 4.2.1 A systematic approach to the turnover of areas should be established, which could include a back-out plan and/or schedule. Planning the sequence of area turnover ensures the logistics to perform remediation activities does not impact the radiological status of a FRS survey unit.
- 4.2.2 Isolation and control measures shall be established for each survey area. Several survey areas of a common type may be grouped for isolation and control purposes.
- 4.2.3 Isolation and control measures shall remain in force until there is no risk of re-contamination from decommissioning activities or the survey area is released from the license.

#### **4.3. Prerequisites**

- 4.3.1 Controls and preparation for FRS shall be based on characterization and/or RA/RASS results that indicate residual radioactivity is unlikely to exceed an applicable action level, dose criterion, or Derived Concentration Guideline Level (DCGL).
- 4.3.2 Decommissioning activities having the potential to contaminate the survey area must be completed prior to the initiation of turnover activities.
- 4.3.3 Tools and equipment not required to perform FRS must be removed from the survey area prior to turnover. Any tools and equipment that remain in the area shall be surveyed for unrestricted release.
- 4.3.4 Housekeeping and cleanup of the survey unit must be completed prior to the initiation of turnover activities.
- 4.3.5 Posting materials used for posting of survey area(s) should be easily recognizable as pertaining to FRS. Examples of these materials are green protective coverings such as tarps, herculite and/or plastic, labels, ropes and signs. Postings and signs used to denote radiologically controlled areas shall not be used. An example of a sign used for posting a FRS area is provided in Attachment 4.

**5. MAIN BODY****NOTE**

Other formats may be used to document survey area turnover provided that the same information is presented as in the Attachments.

**5.1. Initiate Isolation and Control Measures****NOTE**

Upon completion of commodity removal, decontamination and/or demolition activities in a designated FRS “survey unit,” the Site Characterization/License Termination group shall be notified that the decommissioning activities in the survey unit(s) are complete and the area is ready for FRS. This communication may occur formally, (e.g., by schedule, memorandum or through project controls) or in-formally (e.g., by verbal communication). Verification of decommissioning completeness is provided by the turnover process.

5.1.1 When a survey area is deemed ready for FRS, then initiate Attachment 1, “Area Turnover and Control Checklist” for the survey unit and document the following information: (C/FRS Supervisor)

- Survey Area Number
- Survey Unit Number
- Description
- Survey Unit Type
- Survey Unit Area in m<sup>2</sup>
- Initiation date

5.1.2 Forward Attachment 1 to the Vice-President D&D/Construction.

**NOTE**

A checked box indicates an affirmative response.

5.1.3 Indicate acceptability of the survey area by checking the appropriate boxes denoting the following: (Vice-President D&D/Construction)

**NOTE**

Decommissioning and remediation activities are complete when all commodities and wastes have been removed from a survey area and/or survey unit and all remaining materials have been decontaminated to levels less than the unrestricted release criteria or applicable action level.

1.) All decommissioning activities in the survey area are complete.



- 2.) Any and all additional measures necessary to limit the spread of contamination from adjacent areas undergoing decommissioning (e.g., plug vent louvers, cover floor grating, etc.) have been implemented.
  - 3.) All tools or equipment not needed for FRS are removed.
  - 4.) Housekeeping has occurred and is satisfactory for FRS.
  - 5.) All transit paths for the area are eliminated or rerouted where practical except to support FRS.
- 5.1.4 Signify completion by signing and dating Attachment 1 and forward to the responsible C/FRS Supervisor. (Vice-President D&D/Construction)
- 5.1.5 Notify the RE that the Decommissioning Group has released the survey area for FRS. (C/FRS Supervisor)

## 5.2. Pre-Turnover Walk-Down

- 5.2.1 Initiate Attachment 2, “Pre-Turnover Walk-Down” for the survey area and/or survey unit.

### NOTE

The pre-turnover walk-down may be waived at the discretion of the RE or C/FRS Supervisor if information from other sources is sufficient to complete the survey design or, if there are safety or ALARA considerations.

- 5.2.2 If a pre-turnover walk-down is not performed, then document the reason on Attachment 1 in the “Pre-Turnover Walk-Down” section.
- 5.2.3 Describe and document the physical configuration of the area, such as the surfaces in the unit (wall, floor, ceiling, surface soil, etc.), the metric dimensions and the area in square meters.

### NOTE

The “Preparation for Final Radiation Survey” section of Attachment 8, “FRS Sample Plan Cover Sheet” from procedure ZS-LT-300-001-001, “*Final Radiation Survey Package Development*” (Reference 6.1) will not be signed as complete until all identified discrepancies are resolved to the satisfaction of the responsible C/FRS Supervisor.

- 5.2.4 Complete the “Preparations for FRS” section by indicating the performance of the following tasks by checking the appropriate boxes:
- 1.) All decommissioning activities in the area are complete, including removal, as necessary, of items (e.g., sub-surface systems, electrical components, etc.) that could interfere with FRS.
  - 2.) All surfaces to be surveyed are prepared for FRS (e.g. interferences removed, paint removed, penetrations exposed, excavations backfilled, etc.).

- 3.) All decommissioning activities in areas either adjacent to the area to be isolated or that could otherwise affect it are either complete or are deemed not to have any reasonable potential to spread radioactive material to the area.
- 4.) All tools and equipment not needed for FRS are removed.
- 5.) Housekeeping is satisfactory for the performance of FRS.
- 6.) All support apparatus (e.g., ladders or scaffold) and equipment used for FRS do not pose the potential for introducing or spreading plant-related radioactivity in the area.
- 7.) All transit paths to or through the area, except those required to support FRS, are eliminated or re-routed where practical.

**NOTE**

During the walkdown, care should be taken to observe and document any observations that would potentially impact the classification of Class 2 and/or Class 3 Survey Units.

- 5.2.5 If discrepancies are identified, then document under the “Resolved Findings and Observations” section and include the names of person(s) contacted to resolve the issues.
- 5.2.6 Indicate the presence of any “Observed or Potential Hazards” by checking the appropriate boxes on Attachment 2.
- 5.2.7 Document any measures that have been taken or will be taken, to mitigate the identified hazards.
- 5.2.8 Indicate any conditions or physical constraints that may affect survey performance by checking the appropriate boxes and document the resolution of any identified issues.
- 5.2.9 Assess and document the necessary preparations that will be required prior to commencing FRS including person(s) contacted to provide support.
- 5.2.10 Sign and date the completed Attachment 2 and forward to another RE or C/FRS Supervisor for review.
- 5.2.11 Resolve any comments or discrepancies identified in the peer review.
- 5.2.12 Upon completion of Attachment 2, conclude the “Pre-Turnover Walk-Down” section of Attachment 1 by signing and dating in the space provided.  
(RE or C/FRS Supervisor)
- 5.2.13 Place the completed Attachment 2 in the appropriate FRS survey package.  
(RE or C/FRS Supervisor)

**5.3. Area Turnover Survey and Posting****NOTE**

The RE may waive the performance of an area turnover survey if the results from previous surveys (operational, characterization, RA, RASS) indicate a low probability that the survey area contains residual contamination above the applicable action level or DCGL and, the survey area was not remediated prior to the performance of FRS.

- 5.3.1 Review characterization and/or RA/RASS sample data for the survey area to determine if sufficient data is available to perform FRS survey design. (RE)
- 5.3.2 Indicate on Attachment 1 whether a survey is required for turnover, and if yes, provide the RA/RASS Sample Plan number. (RE)

**NOTE**

The same type of instrumentation and instrument sensitivity that will be used for FRS should be used to assess a survey area and/or survey unit for turnover. Instrumentation shall be controlled and operated in accordance with approved procedures and ZS-LT-01, "*Quality Assurance Project Plan (QAPP) for Characterization and Final Radiation Survey*" (Reference 6.2). Use of alternate instrumentation shall be approved by the responsible RE.

- 1.) If the existing radiological survey data is adequate and sufficient for FRS survey design, then the survey performed for area turnover should consist of biased scans only.
- 2.) If inadequate data is available, or if the variability in the existing data is excessive, then the responsible RE shall design a RA/RASS survey in accordance with procedure ZS-LT-200-001-001, "*Radiological Assessments and Remedial Action Support Surveys (RASS)*" (Reference 6.3) to acquire the measurements or samples (e.g., direct measurements, surface soil samples, etc...) necessary for the survey design for FRS.
- 5.3.3 Sign and date Attachment 1 under "Survey for Area Turnover". (RE)
- 5.3.4 When directed, perform a turnover survey of the area using the instructions provided in the RA/RASS sample plan per the following: (C/FRS Technicians)
- 1.) Document the turnover survey results on a survey map.
- 2.) If the instrument alarms while performing the scan survey, then verify the alarm is valid by repeating the scan of the area in question.
- A. If the alarm is confirmed, then document all alarm locations and results on the survey map.
- B. If the alarm cannot be confirmed, then no further action is required.

- 5.3.5 Sign the “Survey for Area Turnover” section of Attachment 1, attach the results of the RA/RASS, including survey maps and data, and forward to the responsible RE. (C/FRS Technicians)
- 5.3.6 Review the RA/RASS results. (RE)
- 1.) Document any “Comments and Observations” in the applicable section of Attachment 1.
  - 2.) If the survey area is acceptable for FRS, then denote approval by signing under the “Comments and Observations” section of the Attachment 1 and instruct the C/FRS Supervisor to post the survey area.
  - 3.) If the survey area is not acceptable for FRS, then cease the turnover process and inform the Vice-President D&D/Construction that the area requires additional remediation.
  - 4.) If the turnover process is terminated because additional remediation is required, then discard the current Attachment 1 and initiate a new Attachment 1 when the survey area is ready to be re-evaluated.

**NOTE**

Designated FRS areas should have controls and postings placed at all entrances. Postings should be highly visible to notify personnel of access restrictions and requirements.

- 5.3.7 Document the controls implemented in the “Posting and Controls” section of Attachment 1. (C/FRS Supervisor)
- 5.3.8 Post FRS areas using signs such as illustrated in Attachment 4, and establish controls as directed by the C/FRS Supervisor. (C/FRS Technicians)

**NOTE**

Posting the area is the minimum requirement for isolation and controls. Other controls include physical restrictions such as stanchions and barricades; use of personnel frisking stations, sticky pads, protective clothing to prevent the introduction of plant-related radioactivity into the area; personnel training, briefing and site wide notices to disseminate information and provide instruction; or any combination of the above. These measures should be considered commensurate with the potential for introducing plant-related radioactivity into the area.

- 5.3.9 File the completed Attachment 1 in the appropriate survey package.

**5.4. Access Control****NOTE**

While it is highly desirable to control access to survey areas as soon as possible following completion of decommissioning activities, it is absolutely essential that access be positively controlled at the time of, and following, the performance of a RA/RASS survey performed for the purpose of area turnover.

- 5.4.1 Entry of personnel and/or equipment into areas that have been “turned-over” and are controlled for unrestricted release and/or FRS will be restricted.

**NOTE**

Most approvals are provided daily or on a case-by-case basis. A generic, one-time approval for access may be granted by the C/LT Supervisor if the potential for introducing plant-related radioactivity is low. An example would be Security performing routine inspections.

- 1.) Personnel shall receive authorization from the C/FRS Supervisor prior to entering these areas.
  - 2.) Personnel entering or exiting an area controlled for FRS purposes shall sign in and sign out on a “FRS Area Access Sign-In Sheet,” Attachment 3.
  - 3.) All personnel, tools and equipment shall be surveyed for the presence of residual radioactive material and/or contamination prior to entering these areas. Exceptions to the survey requirement will be approved by the C/FRS Supervisor.
- 5.4.2 Any work activities to be performed in areas that have been “turned-over” and are controlled for FRS will require prior review and approval by the C/FRS Supervisor.
- 1.) Document the evaluation of access work requests and “approval or denial” using a log book or other tracking mechanism. (C/FRS Supervisor)
  - 2.) Document the date of request for access or evaluation, the name, company and telephone number of the contact person, the work to be performed and the expected duration. (C/FRS Supervisor)
  - 3.) Summarize the conclusions of the assessment to determine if there is any potential impact from the introduction of plant-related radioactivity into the area and, if any actions must be taken to prevent re-contamination (e.g., engineering controls, approval/denial of access). (C/FRS Supervisor)

- 5.4.3 Access control and boundary controls/signage shall be removed from STS areas just prior to backfill. The backfilled area has a very low risk of re-contamination and will revert to an open land area for future FRS evaluation.

### 5.5. Post FRS Routine & Special Surveillances

- 5.5.1 Generate and maintain a list of survey units that have completed FRS and require surveillance. (C/FRS Supervisors)

**NOTE**

Routine surveillances will be performed in areas following FRS completion to monitor for indications of recontamination and verification of postings and access control measures.

**NOTE**

Surveillances are not required in STS survey units that have been backfilled or in piping (embedded or buried) that has been isolated or grouted in place.

- 5.5.2 Perform a routine surveillance of each FRS area on a semi-annual basis. In addition, a surveillance may be performed at any time as determined by the responsible RE when an activity occurs that may have radiologically impacted the survey unit (e.g., transiting a radioactive material package though an FRS area, etc...). Perform surveillances as follows:

- 1.) Review the authorizations and reasons for entry into the area since the performance of FRS or the last surveillance.
- 2.) Perform a walk-down of the area checking for proper postings, barriers, system covers, and/or seals, as appropriate, are intact and, for evidence of disturbance, loss of isolation and control or unauthorized introduction of or placement of radioactive materials.
- 3.) Document the verification on a survey map(s) of the area(s).

**NOTE**

The Canberra *In-Situ* Object Counting System (ISOCS) has been selected as the primary instrument that will be used to perform STS. Consequently, the ISOCS will also be used in the same manner to perform any required surveillance in a STS survey unit. Scanning is not applicable to a STS survey unit.

- 4.) If the results from steps 1 and 2 are not satisfactory, then perform and document a biased scan of the survey area, focusing on access and egress points and any areas of disturbance and/or concern using the same type of instrument and detector, scan speed, and alarm set-points as used in the original survey.

- 5.) Forward the completed surveillances of FRS areas to the RE for review and approval.
- 5.5.3 If a routine surveillance identifies physical observations and/or radiological scan measurements that require further investigation, then FRS may be repeated in the affected survey unit at the discretion of the RE or C/LT Manager.
- 5.5.4 If FRS is repeated in a survey unit, then generate a new sample plan in accordance with ZS-LT-300-001-001, “*Final Radiation Survey Package Development*” (Reference 6.1).

## 6. **REFERENCES**

- 6.1. ZS-LT-300-001-001, “Final Radiation Survey Package Development”
- 6.2. ZS-LT-01, “Quality Assurance Project Plan (QAPP) for Characterization and Final Radiation Survey”
- 6.3. ZS-LT-200-001-001, “Radiological Assessments and Remedial Action Support Surveys (RASS)”

## 7. **RECORDS**

- 7.1. Attachment 1, Area Turnover and Control Checklist
- 7.2. Attachment 2, Pre-Turnover Walk-Down
- 7.3. Attachment 3, FRS Area Access Sign-In Sheet

## 8. **ATTACHMENTS**

- 8.1. Attachment 1, Area Turnover and Control Checklist
- 8.2. Attachment 2, Pre-Turnover Walk-Down
- 8.3. Attachment 3, FRS Area Access Sign-In Sheet
- 8.4. Attachment 4, FRS Area Posting Example

## 9. **FORMS**

None





**Attachment 1  
AREA TURNOVER AND CONTROL  
CHECKLIST**

ZS-LT-300-001-003  
Revision 2  
Information Use

**COMMENTS AND OBSERVATIONS:**

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- Area Turnover Accepted \_\_\_\_\_  
(Print Name/Signature) Radiological Engineer (Date) (Time)

**POSTINGS AND CONTROLS:**

- Area Posted \_\_\_\_\_  
(Print Name/Signature) C/FRS Supervisor (Date) (Time)

- Other Access Controls Implemented

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_

Comments and Observations: \_\_\_\_\_

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**Attachment 2**  
**PRE-TURNOVER WALKDOWN**

ZS-LT-300-001-003  
Revision 2  
Information Use

**Survey Area No.:** \_\_\_\_\_ **Survey Unit No.:** \_\_\_\_\_

**Survey Unit Type:**      Open Land                       Structure                       System

**Survey Unit Classification:**

**Classification:**                      Class 3                       Class 2                       Class 1

**Survey Unit Area:** \_\_\_\_\_ m<sup>2</sup>

**Description:**

**Physical Configuration:**

**Preparations for FRS:** (checked box indicates an affirmative response)

- 1) All decommissioning activities in the area are complete, including removal, as necessary, of items (e.g., sub-surface systems, electrical components, etc.) that could interfere with the survey. ....
- 2) All surfaces to be surveyed are prepared for FRS as necessary (e.g. interferences removed, paint removed, penetrations exposed, excavations backfilled, etc...) .....
- 3) All decommissioning activities in areas either adjacent to the survey unit to be isolated or that could otherwise affect it are either complete or are deemed not to have any reasonable potential to spread radioactive material to the area. ....
- 4) All tools and equipment not needed for FRS are removed. ....
- 5) Housekeeping has occurred and is satisfactory for performance for FRS. ....
- 6) All support equipment (e.g., ladders or scaffold) and equipment used for FRS activities does not pose the potential for introducing or spreading plant-related radioactivity in the area. ....
- 7) All transit paths to or through the area, except those required to support FRS, are eliminated or re-routed where practical. ....

**Resolved Findings and Observations:** (items that would prevent an affirmative response above and how resolved)

**Attachment 2  
PRE-TURNOVER WALKDOWN**

**Observed or Potential Hazards:**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> - Heat stress or stroke          | <input type="checkbox"/> - Confined Spaces   | <input type="checkbox"/> - Kinetic energy sources (moving equipment) |
| <input type="checkbox"/> - Cold work environment          | <input type="checkbox"/> - Hazardous atmospheres                                     | <input type="checkbox"/> - Vehicle traffic                           |
| <input type="checkbox"/> - Stinging insects               | <input type="checkbox"/> - Load bearing stresses                                     | <input type="checkbox"/> - Overhead piping or components             |
| <input type="checkbox"/> - Hazardous plants and/or animal | <input type="checkbox"/> - Lack of structural integrity (structure, floor)           | <input type="checkbox"/> - Exposed electrical circuitry              |
| <input type="checkbox"/> - Tripping hazards               | <input type="checkbox"/> - Release of stored energy sources (hydraulic, steam, etc.) | <input type="checkbox"/> - Sharp objects or surfaces                 |
| <input type="checkbox"/> - Standing water > 1ft deep      | <input type="checkbox"/> - Buried utilities  | <input type="checkbox"/> - Falling objects                           |
| <input type="checkbox"/> - Fall hazards                   | <input type="checkbox"/> - Overhead power lines                                      | <input type="checkbox"/> - Other _____                               |
| <input type="checkbox"/> - Work @ height > 6ft            |  | <input type="checkbox"/> - Other _____                               |
| <input type="checkbox"/> - Open excavations               |  |  |

(Each hazard identified must be evaluated to determine if the hazard can be eliminated, avoided, or minimized, as well as the need for additional support/expertise)

**Hazard(s) Mitigation Measures:**

**Conditions or Physical Constraints That May Affect Survey Performance:**

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> - Painted Surfaces           | <input type="checkbox"/> - Standing Water             | <input type="checkbox"/> - Oily Surface              |
| <input type="checkbox"/> - Cracks/Crevices in Surface | <input type="checkbox"/> - Constraining Vegetation    | <input type="checkbox"/> - Remaining Equipment/Items |
| <input type="checkbox"/> - Inaccessible Surfaces      | <input type="checkbox"/> - Ledge or Rock Outcroppings | <input type="checkbox"/> - Other _____               |

**Resolution:**

**Survey Unit Preparation for Survey:**

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> - Mark reference grid         | <input type="checkbox"/> - Set-up Man Lift              | <input type="checkbox"/> - Extension poles |
| <input type="checkbox"/> - GPS                         | <input type="checkbox"/> - Confined space permit        | <input type="checkbox"/> - Other _____     |
| <input type="checkbox"/> - Mark survey unit boundaries | <input type="checkbox"/> - Set-up Temporary Ventilation | <input type="checkbox"/> - Other _____     |
| <input type="checkbox"/> - Erect Scaffolding           | <input type="checkbox"/> - Radiation Work Permit        | <input type="checkbox"/> - Other _____     |

**Preparation Details:**

Submitted: \_\_\_\_\_ Reviewed: \_\_\_\_\_  
 Print Name/Signature/Date Print Name/Signature/Date



