10.0 RADIATION PROTECTION PROGRAM DURING DECOMMISSIONING

The Radiation Protection Program (RPP) during decommissioning is designed to provide radiological safety measures that are commensurate with the radiological risks associated with the scope and extent of the proposed decommissioning and routine activities at the site. This program and written procedures that implement it are the primary means used to administratively establish safe radiation work practices and ensure compliance with the requirements of the NRC as contained in 10 CFR Parts 19 and 20. The MDNR is committed to the use of written and approved procedures to implement the provisions of this RPP.

It is the policy of the MDNR that worker exposure to ionizing radiation is controlled to levels that are ALARA. The measures and controls described in the RPP are designed to ensure that workers' exposures to internal and external sources of ionizing radiation are controlled to levels that are ALARA, taking into account the potential for exposures to exceed regulatory thresholds that would require worker exposure monitoring.

Revisions to the RPP will be administratively controlled to ensure that any change or revision continues to fully implement the applicable regulations and that any change or revision is approved by the RSO or duly authorized representative. In addition, the RSO will consult with the NRC prior to approving a proposed change to the RPP that does not provide at least an equivalent level of protectiveness of worker exposures to ionizing radiation associated with the site.

10.1 RADIATION SAFETY CONTROLS AND MONITORING FOR WORKERS

A number of RPP elements are required to effect a compliant program and assure adequate worker protection. The degree of complexity and detail warranted for a given program element is dependent upon the radiological conditions at the site and to a large degree upon the tasks that are envisioned and planned for the decommissioning process. The degree of complexity and detail contained in the RPP during decommissioning for the site is influenced by the fact that: 1) all known sources of licensed radioactivity have previously been contained or encapsulated, and 2) no planned activities, whether routine or decommissioning, involve the exposure of workers to significant quantities of unencapsulated or high specific-activity materials. In fact, it is highly unlikely, given these conditions, that workers' exposures to radiation will exceed any threshold that would require monitoring.

10.1.1 Workplace Air Sampling Program

A workplace air-sampling program designed to measure concentrations of radioactive material in air will be implemented, as needed, to assess worker exposure, meet posting requirements, select protective equipment and measures, verify containment, and demonstrate compliance with applicable workplace regulations. Air sampling will be

conducted in accordance with industry standard practices and guidance provided in NRC Regulatory Guide 8.25, *Air Sampling in the Workplace*, as applicable (NRC 1992a).

It is unlikely that a circumstance requiring air sampling or monitoring will be encountered at the site during the conduct of routine and proposed decommissioning activities. This assessment derives from the fact that all known sources of radioactivity at the site have been effectively encapsulated and that no planned activities require that unsealed or loose radioactive materials be encountered or handled. In determining the need to perform air sampling, the radiation protection staff will apply professional judgment and experience to identify air sampling appropriate for the specific situation. Such judgment is based on historical air sampling and characterization results, the quantity of radioactivity being handled, the potential for release of contaminants based on physical form and activity, the type of confinement or containment, and other factors specific to the task or situation, as they are available.

When air sampling is performed, air samples will be collected under known physical conditions (e.g., filter, sample time, flow rate). The flow meters of air samplers will be calibrated at least annually and after repair or modification of the flow meter.

Area air samples may be collected from general or localized areas when and where there is potential for the presence or generation of airborne radioactive material. These area air samples will be used to verify that the confinement of radioactive material is effective, and to provide warning of elevated concentrations of airborne radioactivity. In each case, the sampling point will be located in the airflow pathway near the known or suspected release point(s). As necessary, more than one air sample location may be used in order to provide a reasonable estimate of the general concentration of radioactive material in air.

Area air sampling of the workplace will also be conducted under the following conditions and specified frequencies until sampling data supports the conclusion that the activities being performed are not reasonably expected to produce airborne radioactivity concentrations in excess of the applicable derived air concentration (DAC):

A. Daily in areas with removable surface radioactivity greater than 1,000 dpm/100cm^2 and in which a worker is actively working for greater than one hour during that workday;
B. Daily in areas with total surface radioactivity greater than 5,000 dpm/100 cm^2 and in which the work involves invasive activities such as drilling, scabbling, or otherwise might reasonably give rise to the potential for the release of radioactive materials into the air in excess of the applicable (DAC).
C. Daily in areas with bulk soil radioactivity greater than 100 pCi/g and the work involves invasive activities such as drilling, digging, or otherwise causing the potential for the release of radioactive materials into the air in excess of the applicable DAC.

As familiarity with work activities increases, the RSO may modify the aforementioned conditions. Any modification will be explained and justified in writing by the RSO.

Personnel air sampling, if required, will be implemented as described in Section 10.1.3, *Internal Exposure Monitoring Program*.

10.1.2 Respiratory Protection Program

The respiratory protection program provides guidance and instruction for protection of workers from occupational injury and illness due to exposure to airborne radioactive material. The program is implemented by written procedures. The program and implementing procedures are the primary means used to administratively establish safe respiratory protection practices and compliance with requirements of the NRC.

The program covers routine use of respiratory protection equipment. The functional areas of the program include medical evaluation, fit testing, selection, issue, inspection, use, cleaning, maintenance, storage, and training. In the unlikely event that respiratory protection is used to control the intake of radioactive material, respiratory protection equipment will be prescribed and work will be controlled using a radiation work permit.

10.1.2.1 Medical Evaluation

Prior to the initial fit test, and every 12 months thereafter, a physician will evaluate a worker's medical fitness to wear a respirator. The physician's medical evaluation will be made for each worker required to wear respiratory protection equipment as part of his or her assigned duty. Workers without a current physician's evaluation of medical fitness to wear a respirator will not be issued respiratory protection equipment. A worker will not be allowed to wear a particular type of respirator if, in the opinion of a physician, the worker might suffer physical harm due to wearing the respirator.

10.1.2.2 Respirator Fit Testing

All workers required to wear respiratory protection equipment will be required to successfully complete a fit test prior to initial field use of the equipment. The fit test will be repeated at least annually and for each type, size, or manufacturer of respiratory protection equipment requiring a fit test. A worker will not be allowed to wear a respirator without a current successful fit test. In addition, respirator wearers will be required to maintain the sealing areas free of facial hair or other obstructions that could interfere with the seal or fit of the assigned respirator.

10.1.2.3 Respirator Selection

Respirators will be selected from those approved by the National Institute for Occupational Safety and Health for the contaminant or situation to which the worker may be exposed. Radiation protection personnel will prescribe the respirator type or minimum protection factor required. Selection will be based on the physical, chemical,

and physiological properties of the contaminant, the contaminant concentration likely to be encountered, and the likely physical conditions of the workplace environment in which the respirator will be used.

10.1.2.4 Respiratory Protection Equipment Issuance

When it is determined that respiratory protective equipment is necessary, it will only be assigned or issued to workers qualified, with respect to the program. The type of respirator selected will be documented on the Radiation Work Permit.

10.1.2.5 Respirator Inspection

All respirators will be inspected by the wearer to verify operability before and after each use and after cleaning.

10.1.2.6 Respiratory Protection Equipment Maintenance & Cleaning

Respiratory protection equipment will be maintained to retain its original effectiveness. Replacement or repair will be done only by experienced persons, with parts designed for the respirator. No attempt will be made to replace components or to make adjustments or repairs beyond the manufacturer's recommendations. Reducing valves or admission valves on regulators will be returned to the manufacturer (or certified equivalent) for repair.

Respiratory protection equipment that is used routinely will be cleaned after each use. Respiratory protection equipment that is used by more than one worker will be cleaned and disinfected after each use. The need for cleaning will also be based on contamination surveys of the work area and of the respiratory protection equipment itself.

10.1.2.7 Respirator Storage

Respirators will be stored to protect against dust, persistent exposure to sunlight, extreme heat, extreme cold, excessive moisture, or damaging chemicals. Respirators will be stored in dedicated carrying cases or cartons that protect from dirt and damage.

10.1.2.8 Respirator Wearer Training

All workers required to use respiratory protection equipment will be instructed in the content and applicability of the respiratory protection program and its implementing procedures, and especially in the proper use of the equipment and its limitations. Refresher training will be conducted annually. A worker will not be allowed to use a respirator without current successful completion of training.

10.1.3 Internal Exposure Monitoring Program

It is unlikely that a circumstance requiring personnel monitoring for the assessment of internal exposure to radioactivity will be encountered at the site during the conduct of routine and planned decommissioning activities. This conclusion derives from the fact that all known sources of radioactivity at the site have been effectively encapsulated and that no planned activities require that unsealed or loose radioactive materials be encountered or handled.

If unencapsulated or uncontained radioactivity in quantity greater than 10,000 times the annual limit on intake (ALI) for inhalation or bulk soil radioactivity concentrations greater than 100 pCi/g be encountered during decommissioning work activities at the site, the radiation protection staff will evaluate the potential for the workers intake to exceed 10-percent of the ALI defined in 10 CFR Part 20, Appendix B. Individual monitoring will be provided for workers who require monitoring of the intake of radioactive material pursuant to 10 CFR 20.1502(b). Monitoring of intake will normally be conducted by use of air samples representative of the radioactivity concentration in the breathing zone of affected workers as the primary personnel monitoring method. This is particularly suitable to the MDNR site where thorium is the primary contaminant of concern. Neither *in vivo* monitoring nor bioassay monitoring techniques are particularly sensitive assay methods for quantifying dose from the inhalation of thorium (NRC 1996). Internal dose will be determined by converting airborne concentrations to intakes in accordance with NRC guidance (NRC 1992c).

When a condition exists wherein a worker(s) may have received an unmonitored intake of radioactive material in excess of that requiring monitoring, and that amount cannot otherwise be estimated (e.g., no breathing zone air sampling data was collected), the intake will be determined or bounded by measurements of quantities of radionuclides excreted from or retained in the body. These measurements will be made consistent with the guidance provided in NRC Regulatory Guide 8.9, *Acceptable Concepts, Models, Equations, and Assumptions for a Bioassay Program* (NRC 1993).

Determination of radiation dose to the embryo/fetus will be performed in accordance with NRC Regulatory Guide 8.36, *Radiation Dose to the Embryo/Fetus* (NRC 1992d).

An administrative control limit is established at 50-percent of the applicable ALI to control a worker's cumulative inhalation exposure. Workers who have accumulated more than 250 DAC-hours of inhalation exposure in one calendar quarter will be restricted from work involving exposure to radioactive material until their exposure is evaluated and the RSO authorizes removal of the restriction.

10.1.4 External Exposure Monitoring Program

Based on the fact that all known sources of penetrating radiation at the site are contained within the cell and covered by five feet of clay cover material, it is not anticipated that the regulatory threshold (10 CFR 20.1502(a)), requiring workers to be monitored for

exposure to external radiation, will be reached. This is supported by routine radiation surveys performed over the cell cover, which indicate that penetrating radiation fluence rates are at or near background.

Should external gamma radiation levels in excess of 5 mrem per hour be encountered during decommissioning work activities at the site, the radiation protection staff will evaluate the potential for the workers external dose to exceed 10-percent of the applicable annual worker dose limits defined in 10 CFR 20.1201(a). Individual monitoring devices will be provided to workers who require monitoring for external exposure pursuant to 10 CFR 20.1502(a). External monitoring will be conducted in accordance with (or equivalent to) NRC Regulatory Guide 8.34, *Monitoring Criteria and Methods to Calculate Occupational Radiation Doses* (NRC 1992c).

External exposure monitoring, when required, will be accomplished using passive personnel dosimeters of the type and energy-response characteristics appropriate for the penetrating gamma-radiation field at the site. Whole-body external radiation dosimeters will be worn on the front of the upper torso. It is anticipated that personnel dosimeters that operate on the principle of thermoluminescence (TLD) or optically stimulated luminescence will be used to monitor personnel exposure, as required. For work areas where the external radiation field is significantly non-uniform and external monitoring is required, extremity dosimetry will also be issued to the worker. Radiological surveys may be performed to supplement personnel monitoring when work is being performed where workers are required to be monitored.

Dosimeters will be processed at least quarterly by a dosimetry processor accredited in the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute of Standards and Technology (NIST) pursuant to 10 CFR Part 20.1501(c).

An administrative control limit for external whole-body exposure is established at 50-perecent of the annual effective dose equivalent (AEDE) limits for workers as specified in 10 CFR Part 20. Workers who have accumulated more than 1,250 mrem of whole-body external dose in one calendar quarter will be restricted from work involving exposure to radioactive material until their exposure is evaluated and the RSO authorizes removal of the restriction.

10.1.4.1 Summation of External and Internal Exposures

Results of internal and external monitoring will be used to calculate total organ dose equivalent and total effective dose equivalent (TEDE) to workers for which monitoring is required. Summation of internal and external doses will be performed as required in 10 CFR 20.1202 and in accordance with NRC guidance (NRC 1992c).

10.1.5 Contamination Control Program

The objective of the contamination control program element is to contain and control radioactivity during decommissioning activities prior to the final status survey such that

radioactivity will not be inadvertently or indiscriminately distributed in the workplace and surrounding environment. Accordingly, engineering controls, administrative controls (including procedures), personal protective equipment (PPE), and verification surveys are components of the contamination control program. As a general rule, engineered control methods are preferable to administrative control methods because they are less subject to human error and do not require interpretation to be effective. PPE is considered only when it is impractical or ineffective to use engineering and administrative controls to control worker exposures to uncontained radioactive materials. Use of PPE in lieu of engineering and administrative controls is consistent with the principle of ALARA.

Engineering controls will be used, as practicable, to minimize or prevent the presence of uncontained radioactive material. Engineering controls will typically be comprised of containment, isolation, ventilation, and decontamination. When working with soils, dust suppression methods such as soil wetting may be used.

Administrative controls will be used to control work conditions, inadvertent and uncontrolled access, and specific work practices. Administrative controls will predominantly consist of access control, postings, barriers, procedures, and permits. Routine access to work areas will be limited to personnel necessary to accomplish tasks or activities. Access will also be controlled with respect to training and use of specified personnel protection equipment. Postings will be used to inform personnel of relevant hazards or conditions and associated access requirements. Barriers will be used to demarcate areas subject to access restrictions and to control unauthorized access. Written procedures are used to describe specific radiation protection requirements necessary for tasks that involve radioactive material. A system of work authorization and control using Radiation Work Permits (RWP) will be used to describe specific or special worker protection requirements for activities involving radioactive material and not covered by a procedure. RWPs may also be used in conjunction with a procedure.

Personal protective equipment will be used to control personnel exposure to radioactive material when administrative controls are not sufficient and engineering controls are not practicable. Personal protective equipment may include head covering, eye protection, respiratory protection, impervious outerwear, gloves, and/or protective shoes or shoe covers.

Again, it is unlikely, given the planned routine and decommissioning activities outlined and the fact that all known sources of residual radioactivity have already been effectively encapsulated and contained, that measurable quantities of residual radioactivity will be encountered during decommissioning at the site. Nonetheless, contamination surveys will be performed periodically, as necessary, to ensure that contamination containment and control measures remain effective. Radioactive contamination surveys, when required, will be performed in accordance with approved procedures.

In the unlikely event that work areas at the site are found to have residual surface radioactivity concentrations higher than an approved surface activity DCGL or those surface activity limits described in the NRC's Policy and Guidance Directive (PGD) 83-

23, the area will be posted and controlled to preclude unauthorized access. The surface activity limits from PGD 83-23 applicable to the radionuclides present at the site are presented in Table 10-1 below. Personnel access to areas posted and controlled due to the presence of unencapsulated or uncontained radioactivity will be regulated with a Radiation Work Permit (RWP) system. Personnel entering an area posted and controlled due to the presence of unencapsulated or uncontained radioactivity will be required to perform a scan of their person upon exiting the area.

Table 10-1 Acceptable Surface Radioactivity Levels, (dpm/100cm^2)

Radiation Type	Removable	Total, Average	Total, Maximum
Alpha or Beta	200	1,000	3,000
Surface radioactivity levels derived from U.S. NRC PGD 83-23 (NRC 1987) and RegGuide 1.86 (NRC 1974)			

Equipment and materials within areas posted and controlled due to the presence of unencapsulated or uncontained radioactivity, or which have been in contact with unencapsulated or uncontained radioactivity, will be surveyed to verify that they meet the acceptable surface radioactivity levels of PGD 83-23.

10.1.5.1 Contamination Control Surveys

Contamination control surveys will be performed under the following conditions:

- Weekly in occupied areas posted and controlled due to the presence of unencapsulated or uncontained radioactivity.
- Daily in step-off areas when in use.
- Periodically during, and at the completion of, radiological decontamination operations for materials, equipment, and personnel.
- Quarterly on the exterior surfaces of containers/packages containing residual radioactivity and which are stored on site.

Additional contamination control surveys may be performed in support of work activities controlled by RWPs. When required, the survey type and frequency will be specified by responsible radiation protection staff on the RWP controlling the work activity.

10.1.5.2 Contamination Control Action Limits

Contamination control action limits are administrative controls established to provide for predetermined response actions designed to control radioactivity at the source and to provide for effective radiation safety measures for workers. Contamination control action limits to be used during decommissioning activities at the site are identified in Table 10-2.

Table 10-2 Contamination Control Action Limits

Concentration	Condition/Location	Action
Removable Surface Radioactivity		
> 200 dpm/100 cm^2	In an area that is not controlled for the presence of uncontained or unencapsulated radioactive material.	• Control access to the area • Notify the RSO
> 20,000 dpm/100 cm^2	In an area that is controlled for the presence of uncontained or unencapsulated radioactive material.	• Stop work in the affected area • Notify the RSO • Verify that in place contamination controls have been effective to prevent the uncontrolled spread of radioactive materials • Evaluate contamination control measures, personnel protective measures, and personnel exposure monitoring requirements necessary to continue work in the area.
Total Surface Radioactivity		
> 1,000 dpm/100 cm^2	In an area that is not controlled for the presence of radioactive material.	• Control access to the area • Determine whether removable radioactive material is present • Notify the RSO
> 100,000 dpm/100 cm^2	In an area that is controlled for the presence of radioactive material.	• Stop work in the affected area • Determine whether removable radioactive material is present • Notify the RSO • Verify that in place contamination controls have been effective to prevent the uncontrolled spread of radioactive materials • Evaluate contamination control measures, personnel protective measures, and personnel exposure monitoring requirements necessary to continue work in the area.
Personnel Contamination Surveys		
> 1,000 dpm/100 cm^2	On exposed surfaces of an individual's personal clothing and skin (following removal of PPE, as applicable)	• Notify the RSO. • Decontaminate the individual. • Evaluate contamination control measures and personnel protective measures necessary to continue work in the area.

10.1.6 Instrumentation Program

Field instrumentation capable of performing the radiation surveys and measurements of radioactive material required by regulation, license, and procedures will be provided and used, as needed. Instrumentation used by offsite laboratories or other subcontracted analytical services will be maintained in accordance with their quality assurance program and subject to any additional considerations or specifications identified in the contract. Typically, contracted analytical services vendors are expected to maintain an accredited

or certified laboratory quality control program that includes an instrument control and maintenance program.

Instruments will be operated in accordance with the manufacturers' operating instructions and guidance, as appropriate and operators will be proficient in their use. Based upon the routine and anticipated decommissioning tasks to be performed at the site, a collection of radiological field measurements has been planned. The type(s) of radiological field instrumentation projected for use in each type of field measurement are identified in Table 10-3 along with an example of the specific instrument make and model of instrument for the given instrument type or class. The specific instruments used in the example column are the instruments that are currently available for use by MDNR.[1] Nominally, MDNR plans to maintain one each of the instruments described in **Table** 10-3 with the **exception** of the alpha/beta surface activity detector and personal air sampling pumps. MDNR plans to have two alpha/beta surface activity detectors and three personal air-sampling pumps available on site.

Table 10-3 Radiological Field Instrumentation

Measurement Type	Instrument Type/Class	Example
Gamma surface soil gamma screening/scans	Scaler/Ratemeter w/NaI detector	Eberline E600 w/SPA-3
Field screening of samples	Field portable gamma spectrometer	Exploranium GR-130 miniSPEC
General area gamma (external) radiation levels/dose rates	Gross gamma radiation exposure/dose rate meter	Bicron Micro-rem, Eberline R02
Direct static surface measurements of building and equipment surfaces	Scaler/Ratemeter with surface activity detector	Eberline E600 w/ SHP-100 (gas proportional), SHP-380 (dual phosphor scintallator), or SHP-360 (pancake GM) detector probe
Scan surveys of surfaces	Alpha or Beta count ratemeter with surface activity detector	
Personnel frisking	Alpha or Beta count ratemeter with surface activity detector	Eberline E600 w/ SHP-380 (dual phosphor scintallator), or SHP-360 (pancake GM) detector probe
Smear Sample Counting	Alpha/Beta sample counter, scaler	Eberline HandECount Scaler
Air Sample Counting		
Collection of High Volume Area Air Samples	Flow rate or total volume calibrated air sampler pump	SAIC H-810 high flow air sampler
Collection of Personal Air Samples	Flow rate or total volume calibrated air sampler pump	MSA low flow personal air sampler

The management of radiation detection instrumentation is described in the following sections.

1 MDNR reserves the right to use alternate, functionally equivalent models of instruments or instruments made by other manufacturers in the course of decommissioning work.

10.1.6.1 Instrument Supply & Storage

Radiation detection and measurement instrumentation is not owned by MDNR. Instrumentation needed to perform the field measurements described will be supplied by the decommissioning contractor from their inventory or through a subcontracted supplier, as necessary. The decommissioning contractor has a reasonably large inventory of many of the instruments described above from which MDNR may draw. However, the relatively limited scope of the planned decommissioning work and its associated radiological survey and measurement requirements negates the need for a large onsite inventory of instrumentation.

Nominally, MDNR plans to maintain one each of the instruments described in Table 10-3 with the exception of the alpha/beta surface activity detector and personal air sampling pumps. MDNR plans to have two alpha/beta surface activity detectors and three personal air-sampling pumps available on site.

When not in use, radiation protection instrumentation used on the site will be stored in a clean, dry environment. Instrumentation will be stored in a manner that provides a reasonable expectation that it will not become physically damaged and where access is controlled. For example, instrumentation may be stored in the LCTS building prior to demolition on the site or in a vehicle that is locked outside of working hours.

10.1.6.2 Calibration

Calibration, maintenance, repair, and efficiency determination will be performed according to written procedures, instructions, or other guidance documents reviewed and approved by the RSO, or by a commercial calibration service.

A. Frequency - Instruments will be calibrated annually or following maintenance, repair, or adjustment likely to affect the primary calibration.

B. Radiation Energy - Calibration will be performed using a source(s) providing radiation fields similar to those in which the instrument will be used.

C. Label - Each instrument or detector will be labeled or marked with the following information as applicable:

   i. Unique identification (e.g. serial number),
   ii. Initials or specific identifying mark of individual completing the calibration,
   iii. Energy correction factors,
   iv. Graph or table of calibration factors for each type of radiation for which the instrument may be used,
   v. Instrument response to an identified check source,
   vi. Unusual or special use conditions or limitations, and
   vii. Date by which calibration is again required.

D. Standards – Instruments used to detect and measure radiation will be calibrated using traceable standards and sources (e.g., NIST) and that are appropriate for the types and energies of the of radiation emitted by the radionuclides present at the site. In some cases (e.g., ISOCS gamma spectrometry systems) it is possible to establish a calibration factor for a measurement system without the use of a radioactive calibration source (a sourceless efficiency calibration).

10.1.6.3 Verification

Portable field radiation detection instruments in use will be verified (response checked) daily to ensure that the instrument is in proper working condition. An instrument will be removed from service if the response check is not within ±20 percent of the initial post-calibration value. Maintenance or repair will be performed if the daily source or background checks are not within prescribed ranges.

10.1.6.4 Sensitivity

Radiation detection systems will be capable of confidently detecting emissions of radioactivity less than the respective action or decision limits associated with the type of measurement for which the instrument is used. Measurement sensitivity (MDC or MDA) will be determined in accord with industry standard guidance such as that described in NUREG-1575, Section 6.7. Minimum detection sensitivity will be reported at the 95% confidence level. Uncertainty in individual radiological measurements will be calculated and reported, to the extent practicable, as described and recommended in NUREG-1575, Section 6.8.

10.2 NUCLEAR CRITICALITY SAFETY

The radioactivity materials present at the site do not contain fissionable or fissile materials as defined by regulation. As such, criticality is precluded as a possibility, making a nuclear criticality safety program unwarranted.

10.3 HEALTH PHYSICS AUDITS, INSPECTIONS, AND RECORD-KEEPING PROGRAM

During decommissioning, the RPP will be subject to internal programmatic review and periodic inspections. Programmatic reviews are performed to assess the continuing relevance of the program in light of current regulation and both current and planned future work scope. Programmatic reviews also have as a goal, the assessment of the effectiveness of program (or program element) in achieving the desired outcome. Inspections are performed to determine if radiological operations are being conducted in accordance with regulations, license conditions, approved programmatic requirements, permits, and written procedures.

10.3.1 Programmatic Reviews

Programmatic reviews will be performed periodically, as specified by the RSO. During periods when active onsite decommissioning activities are not being performed, programmatic reviews will be limited to consideration of the impact of new regulations and the effectiveness of routine surveillance activities at the site. During periods of active onsite decommissioning activities, a review of the RPP will be performed annually by the Radiation Safety Committee (RSC), as directed by the RSO. The program review during periods of active onsite decommissioning activities will consider the basic functional areas of the program; e.g. radiation work permits, radiation protection procedures, radiological surveys and air monitoring, ALARA program, individual and area monitoring results, access controls, respiratory protection program, and training.

A written report describing the results of a programmatic review will be generated upon completion and will be distributed to site management. As necessary, a written corrective action plan will be prepared to address non-compliance issues. All corrective actions will be tracked to completion. Once corrective actions have been completed, a written closure report will be distributed to management documenting the completion of corrective actions. Areas or conditions found to be in violation of applicable NRC regulation will be reported to the designated NRC Site Inspector, as appropriate.

10.3.2 Periodic Inspections and Surveillances

Periodic inspections of site conditions and surveillance of work practices and activities will be conducted by the Health and Safety staff or other responsible personnel, as designated by the RSO. The inspections will normally be completed with the aid of a checklist, whereas, surveillances are typically not scripted with a checklist. Inspections and surveillances will be documented and forwarded to the RSO for review and consideration. Out-of-compliance findings and observations discovered during an inspection or surveillance will be recorded on a tracking log. The log will be maintained by the RSO, or designee, and will include a description of planned corrective action and date of completion of corrective action.

Inspections/surveillances appropriate to the site conditions and tasks being performed will be scheduled weekly during periods of active onsite decommissioning activities. During periods of inactivity, site inspection and surveillance will be performed quarterly.

10.3.3 Records of Programmatic Reviews, Inspections, and Surveillances

Programmatic reviews, inspections of site conditions, and surveillances of work practices and activities will documented and forwarded to the RSO for review and consideration. At a minimum, records of the performance of reviews, inspections, and surveillances will include: 1) the date performed; 2) the name(s) and signatures of the person(s) performing the review; 3) inspection, or surveillance; 4) persons contacted or observed; 5) areas reviewed, or inspected; 6) activities viewed; 7) findings; and 8) immediate corrective actions taken, if any.