

Enclosure 1
Changes to Hermes PSAR Chapter 12
(Non-Proprietary)

emergency actions, including notifications. After facility commissioning, and until facility decommissioning, an SS is stationed at the site. The SS reports to the PM or designated alternate.

The SS authorizes work in several ways, which may include approving daily plans, work permits, and execution of specific operations procedures. Activities are approved based on the site's readiness to safely execute those activities.

12.1.2.6 Senior Operators and Operators

Senior Operators and Operators are responsible for conforming to applicable rules, regulations, and procedures for operation of the facility. Senior Operators accept responsibility for safe and efficient operation of a portion of the facility when designated by the SS. Senior Operators and Operators are responsible for maintaining Senior Operator and Operator status, respectively.

12.1.2.7 Quality Manager

The Quality Manager (QM) reports to the Site Executive and ~~is responsible for overseeing review and audit of plant operations by review and audit teams,~~ has responsibilities as described below. The QM is responsible for auditing for compliance with regulatory requirements and procedures through assessments and technical reviews, monitoring organizational processes to ensure conformance to commitments, and licensing document requirements. The QM has sufficient independence from other priorities to bring forward issues affecting safety and quality. The QM has the ability and responsibility to report to the CEO any quality issues that cannot be resolved at the Site Executive or PM level.

12.1.2.8 Radiation Protection

Radiation Protection reports to the Technical Services Manager and is responsible for establishing and implementing the RP program and the as low as reasonably achievable (ALARA) program, monitoring worker doses, and calibration of health physics instrumentation. Radiation Protection has the authority to terminate unsafe activities ~~pending review by management.~~ Management could subsequently overrule following appropriate analysis and consideration the Radiation Protection termination of an activity.

12.1.3 Staffing

Sufficient resources are provided in personnel and materials to safely conduct plant operations. Specific staffing considerations, minimum staffing levels, allocation of control functions, overtime restrictions, shift turnover, procedures, training, and availability of Senior Operators during routine operations will be provided in the application for an Operating License, consistent with 10 CFR 50.34(b)(6)(i).

12.1.4 Selection and Training of Personnel

An indoctrination and training program is maintained for personnel performing, verifying, or managing facility operation activities. ANSI/ANS 15.4-~~2007~~2016, "American National Standard for the Selection and Training of Personnel for Research Reactors" (Reference 1) is used in the selection and training of personnel as applicable. Records of personnel training and qualification are maintained.

A description of the training program and the required minimum qualifications for facility staff will be provided in the application for an Operating License, consistent with 10 CFR 50.34(b)(6)(i).

The licensed operator training program, including the requalification training program, is addressed in Section 12.10.

12.2 REVIEW AND AUDIT ACTIVITIES

The Plant Manager Site Executive establishes the Review and Audit Committee and ensure that the appropriate technical expertise will be available for review and audit activities. Committee activities are summarized and reported to the Site Executive. The details of review and audit activities and who holds the approval authority and how it communicates and interacts with facility and corporate management will be provided in the application for an Operating License, consistent with 10 CFR 50.34(b)(6)(ii).

12.3 PROCEDURES

Operating procedures provide appropriate direction to ensure that the facility is operated normally and within the design basis and technical specification limits. Activities affecting safety are performed in accordance with approved implementing procedures. The level of detail in a procedure is dependent on the complexity of the task and considers the experience, education, and training of the users and the consequences of errors. Expectations for the use of procedures are documented and communicated to facility personnel.

Technical specifications require procedures for the following topics consistent with Section 6.4 of ANSI/ANS 15.1-2007, "The Development of Technical Specifications for Research Reactors" (Reference 2):

- Startup, operation, and shutdown of the reactor
- Maintenance of major components of systems that may have an effect on nuclear safety
- Surveillance checks, calibrations, and inspections required by the technical specifications
- Personnel radiation protection, consistent with applicable regulatory guidance; procedures include management commitment and programs to maintain exposures and releases ALARA in accordance with applicable guidance
- Administrative controls for operations and maintenance and for the conduct of irradiations and experiments that could affect nuclear safety
- Implementation of required plans (e.g., emergency, security)

A description of the facility procedures, including the review, approval, and changes processes, will be provided with the application for an Operating License, consistent with 10 CFR 50.34(b)(6)(vi).

12.4 REQUIRED ACTIONS

Technical specifications specify the actions be taken when a Safety Limit is exceeded; or a Limiting Condition for Operation (LCO) or its associated Surveillance Requirement (SR) is not met. Technical specifications are described in Chapter 14 and will be provided with the application for an Operating License, consistent with 10 CFR 50.34(b)(6)(vi).

12.5 REPORTS

Technical specifications specify the required routine operating reports and reporting requirements for changes to the facility or facility organization to be provided to the NRC. Technical specifications are described in Chapter 14 and will be provided with the application for an Operating License, consistent with 10 CFR 50.34(b)(6)(vi).

12.6 RECORDS

The records management program defines the process for managing test reactor facility records. The records management program includes the identification, generation, authentication, maintenance, and disposition of records. The records management program is implemented as part of the Quality Assurance Program described in Section 12.9.

The technical specifications will specify the required records to be maintained, where and how they are maintained and the length of retention for the facility. Technical specifications are described in Chapter 14 and will be provided with the application for an Operating License, consistent with 10 CFR 50.34(b)(6)(vi).

12.7 EMERGENCY PLANNING

In accordance with 10 CFR 50.34(a)(10), the specific information required of a PSAR in Appendix E.II, a description of the plans for addressing emergencies is provided in Appendix A of this chapter. The emergency plan will be updated with the application for an Operating License, consistent with the requirements in 10 CFR 50.34(b)(6)(v). The emergency plan will consider the guidance provided in ANSI/ANS 15.16-2015, "Emergency Planning for Research Reactors" (Reference 3), RG 2.6, "Emergency Planning for Research and Test Reactors", Revision 2, and NUREG-0849, "Standard Review Plan for the Review and Evaluation of Emergency Plans for Research and Test Reactors".

12.8 SECURITY

A description of the security plan for the facility will be provided with the application for an Operating License consistent with 10 CFR 50.34(c) and will consider the guidance provided in RG 5.59, "Standard Format and Content for a Licensee Physical Security Plan for the Protection of Special Nuclear Material of Moderate or Low Strategic Significance", Revision 1.

12.9 QUALITY ASSURANCE

The Quality Assurance Program Description (QAPD) for the design, construction, and operation of the Hermes reactor is based on ANSI/ANS 15.8-1995 (R2005), "Quality Assurance Program Requirements for Research Reactors" (Reference 4) and considers the guidance from RG 2.5, "Quality Assurance Program Requirements for Research and Test Reactors", Revision 1. The QAPD is provided as Appendix B to this Chapter.

12.10 REACTOR OPERATOR TRAINING AND REQUALIFICATION

The operating training and requalification plan is developed and implemented in accordance with 10 CFR 55 as it pertains to non-power facilities. Kairos Power complies with the requirements of 10 CFR 55 as it pertains to non-power facilities (e.g., 10 CFR 55.53(j), 10 CFR 55.53(k), 10 CFR 55.61(b)(5)). The operating training and requalification plan will be provided with the application for the Operating License, consistent with the requirements in 10 CFR 50.34(b)(8). The qualification process will include passing a comprehensive written exam and an operating test as required by 10 CFR 55.

12.11 STARTUP PLAN

The startup plan will be provided with the application for the Operating License, consistent with the requirements in 10 CFR 50.34(b)(6)(iii).

12.12 REFERENCES

1. American National Standards Institute/American Nuclear Society (ANSI/ANS) 15.4-~~2007~~2016, "American National Standard for the Selection and Training of Personnel for Research Reactors." 2007.
2. American National Standards Institute/American Nuclear Society (ANSI/ANS) 15.1-2007, "The Development of Technical Specifications for Research Reactors." 2007.
3. American National Standards Institute/American Nuclear Society (ANSI/ANS) 15.16-2015, "Emergency Planning for Research Reactors." 2015.