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Chapter 10.3 Facility Readiness Reviews for Hazardous or Critical Facilities

10.3.1 Applicability of this chapter

10.3.1.1 You are required to follow this chapter if you:

- a. Oversee a facility described in paragraph 10.3.3.
- b. Are a member of an Operational Readiness Inspection (ORI) or a Use Readiness Review (URR) committee.
- c. Are a director with a facility that requires a facility readiness review.

10.3.2 Definition of a facility readiness review

10.3.2.1 “Facility,” as used in this chapter, may be a building, a work area in a building such as a test chamber, or an outside work area.

10.3.2.2 A facility readiness review is a management review to determine whether a facility is ready to operate and operate safely after initial construction or modification. There are two levels of facility readiness reviews at JSC, depending on the hazards, criticality, or complexity of the facility, which are listed and defined below:

- a. An ORI is a rigorous inspection by a committee to approve a critical, complex, or hazardous facility as ready to operate safely and effectively before it begins operations.
- b. A URR is a lower-level review to approve less hazardous, complex, or critical facilities (see Table 10.3-1) as ready to operate safely and effectively before they begin operations.

NOTE: Other requirements in this JPR, such as Chapter 6.8, require readiness reviews for specific activities, such as hazardous testing and associated test equipment. Chapter 10.3 only covers reviews necessary to approve initial facility operation or resuming facility operation after a modification.

NOTE: As required in Chapters 2.3 and 10.1, as well as NPR 8820.2, preparation must begin in the early design stages of the facility development or modification. This includes hazard analyses and hazard controls, testing and checkout requirements, and necessary documentation per Chapter 10.4.

10.3.3 When a facility readiness review is required

Facilities with a low risk of injury, damage, or mission failure, such as office buildings, don’t require a facility readiness review, but other standards may require acceptance testing of certain systems (see Chapter 10.1). Table 10.3-1 provides the criteria for which facilities shall have an ORI or a URR. The Safety and Test Operations Division will work with the facility organizational directors to determine the appropriate level of readiness review. Send requests for and questions about the facility readiness review process to the JSC-TSO-Mailbox with your contact information .

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<i>Facility . . .</i>	<i>ORI criteria . . .</i>	<i>URR criteria . . .</i>
New JSC Facilities	Major facilities posing a significant risk of death, serious injury, serious property damage, failure of JSC's mission, or failure of space flight missions.	Facilities posing a very low risk of death, serious injury, or mission failure. Facilities posing a significant risk of minor injury, moderate property damage, or mission failure. The Director, Safety and Mission Assurance, or designee, shall concur that a URR, rather than an ORI, is allowable.
Modifications to JSC Facilities that were previously approved via an ORI or URR	See Flowchart in Figure 10.3-1 below.	See Flowchart in Figure 10.3-1 below.
Non-JSC Facilities where JSC personnel participate in hazardous operations	Non-JSC facilities with personnel in a vacuum or an oxygen-enriched environment with a contract or agreement with any non-JSC organization to support a JSC program that includes this chapter. This chapter applies to non-JSC facilities that: <ul style="list-style-type: none"> • Have altitude, space simulation, or hyperbaric chambers • Test or check out spacecraft • Use other equipment in operations with personnel in a vacuum or an oxygen-enriched environment 	Non-JSC facilities where other hazardous environments are involved at the discretion of Safety and Mission Assurance management or the managers overseeing personnel working at the facility

Table 10.3-1: Criteria for ORIs and URRs

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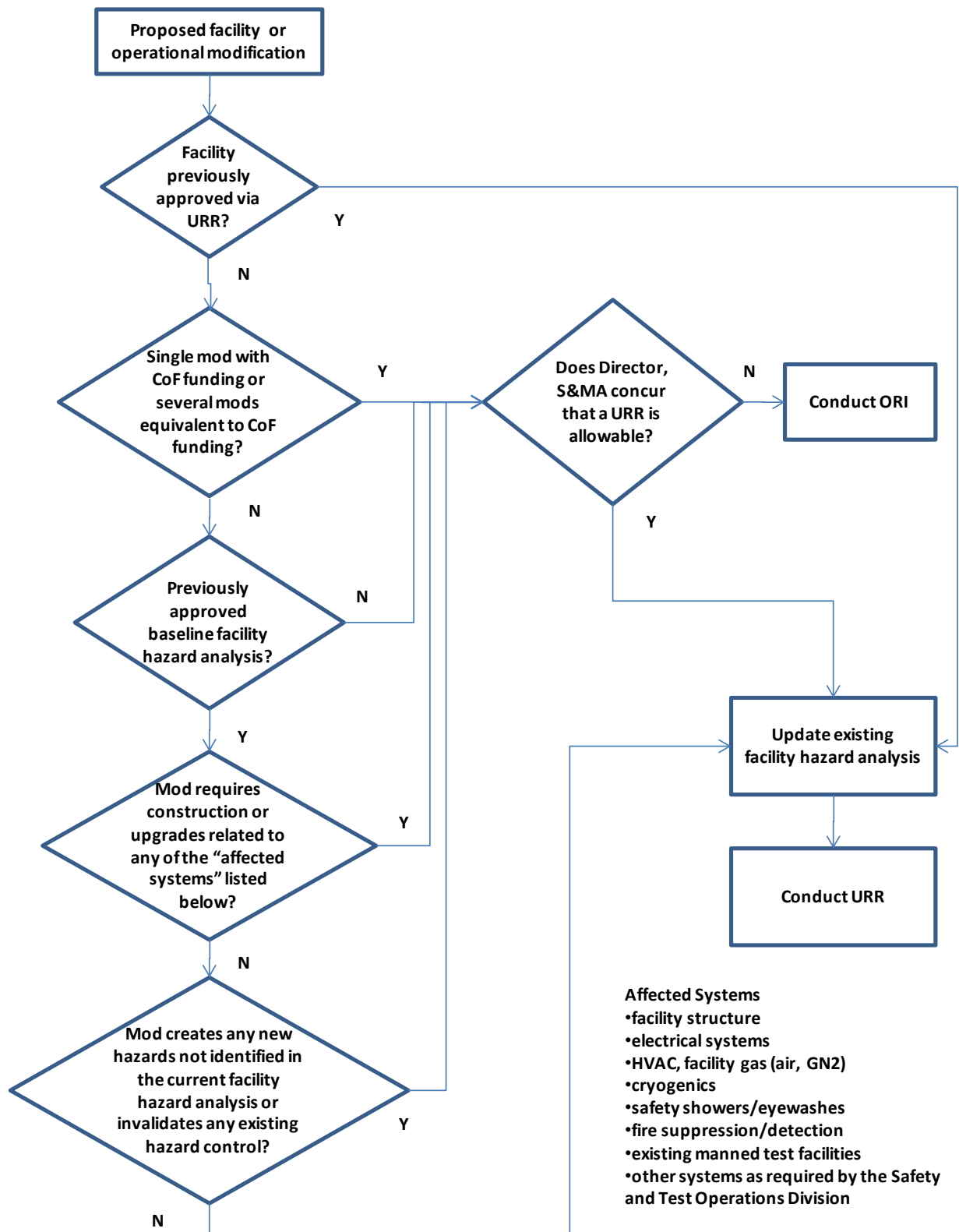


Figure 10.3-1Criteria for ORI and URR for facility modifications.

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10.3.4 Requirements for facility readiness reviews

10.3.4.1 When required by paragraph 10.3.3 above, a facility shall have a facility readiness review before starting or resuming operations. The following apply:

- a. The organizational director responsible for the facility shall ensure the facility readiness review is held before acceptance testing, but may conduct non-hazardous tests and check out the facility's systems and equipment before the facility readiness review unless the facility uses human subjects in a vacuum or an oxygen-enriched environment.
- b. JSC organizations shall never put personnel in a hazardous environment or jeopardize NASA property or missions as a part of any test or checkout before:
 - (1) Completing at least an initial facility readiness review and resolving the committee's recommendations.
 - (2) Following human research policies and procedures, such as NPD 7100.8, "Protection of Human Research Subjects."

10.3.5 Appointing a review committee

10.3.5.1 The following outlines the process for appointing an ORI or a URR:

- a. For an ORI:
 - (1) The organizational director responsible for the facility coordinates with the Center Director and Safety and Mission Assurance to select the ORI chair and suggest potential members for the ORI committee.
 - (2) The Center Director appoints the committee members via a letter with the concurrence of the chairperson, considering any suggestions made.
 - (3) At least two member should be division chief or above.
 - (4) The Appointing Official (AO) and committee chair may deviate from the membership list with documented rationale and concurrence from the Director, SMA.
- b. For a URR:
 - (1) The division chief responsible for the facility nominates members for the URR committee and prepares an appointing letter for the signature of the responsible organizational director.
 - (2) The organizational director is the appointing authority and will appoint a committee chairperson.
 - (3) Safety, Occupational Health, and Medical organizations may waive their participation and other members may be omitted with documented rationale and concurrence from the Director, SMA.
- c. A review committee shall consist of the following members, not from the organization responsible for the facility:
 - (1) A committee chairperson who runs the committee (division chief or above, for ORIs, branch chief or above for URRs).

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- (2) An executive secretary to handle the administrative tasks.
- (3) A doctor knowledgeable of occupational and environmental medicine requirements, if required.
- (4) An industrial hygienist if occupational health concerns are involved.
- (5) One representative from the Safety and Test Operations Division or resident Safety and Mission Assurance Office.
- (6) One representative from the quality branch. At JSC field sites, one person from the resident Safety and Mission Assurance Office may represent safety and quality.
- (7) One representative from the organization supplying the test subjects.
- (8) Other members from disciplines such as facility engineering, facility management techniques, and test engineering. Members from non-JSC organizations are also desirable.
- (9) Alternate members picked by the appointing authority to fill in for regular members who must be absent.

d. Support personnel shall include:

- (1) The management responsible for the facility, who will serve as the single point of contact with the review committee and make sure the facility is ready for the review.
- (2) Personnel who operate the facility or others asked to support the review who will provide requested information.

10.3.6 Facility readiness review process

A facility readiness review usually follows the process in Attachment 10.3A, Appendix F. The chairperson may change the procedure to fit the circumstances as long as the intent of the procedure is fulfilled.

10.3.7 Scope of a facility readiness review

10.3.7.1 The committee shall review the following items to ensure they are adequate for safety, health, and operations:

a. Facility design, construction, or changes to include.

- (1) The facility, associated facility systems, and associated facility equipment.
- (2) Test equipment when required by the Director, Safety and Mission Assurance (SMA) or designee. Otherwise, test equipment will be reviewed and approved by the Test Readiness Review process.
- (3) Facility test support equipment which falls outside the definition of test equipment.

b. Facility staff, to include:

- (1) Its size and organization.
- (2) The responsibilities of each staff member.
- (3) Training for each staff member.

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- c. Interfaces among and responsibilities for all organizations operating or using the facility.
- d. Pre-operations inspection, quality control, and shakedown testing in the facility.
- e. Plans and procedures for normal and emergency operations.
- f. Facility Safety Management Process Documentation to include determining what documentation the facility must keep, based on facility function and risk, as described in Chapter 10.4.
- g. Facility safety program, to include the following:
 - (1) Supporting safety services and facilities.
 - (2) Hazard analyses.
 - (3) Compliance with all applicable safety requirements, such as this JPR and other JSC, NASA, NFPA, and federal requirements.
 - (4) Human factors and occupational health.
- h. Reliability, failure mode and effects analyses, and single-point failure summaries.
- i. Other factors directly or indirectly affecting the safe operation of the facility.
- j. Environmental protection.

NOTE: The committee chair may modify the scope of the review with documented rationale and concurrence from the AO and SMA.

10.3.8 Addressing review committee recommendations and action items

10.3.8.1 The manager responsible for the facility shall:

- a. Present action plans to the committee to validate the proposed actions fulfill recommendations.
- b. Take corrective action on all mandatory ORI recommendations and URR action items by the committee deadlines.
- c. Never conduct any operations involving personnel in a hazardous environment before corrective action on mandatory recommendations is complete.
- d. Consider non-mandatory ORI recommendations or any other URR recommendations for early implementation.
- e. Present action plans to the committee for approval and provide written documentation as necessary to verify actions are complete.
- f. Discuss with the committee any mandatory ORI recommendation or URR action item you can't take action on because of cost, operational, or schedule impacts. If the committee doesn't change the recommendation or action item, request relief as follows :
 - (1) Request relief from the Appointing Official for recommendations not involving JSC, NASA, NFPA, state, or federal requirements. Concurrence from SMA is required. Concurrence is also required from senior management of the organization that supplies test subjects on any relief request involving the safety of human subjects.

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- (2) Follow the relief process in Chapter 1.3, “Written Safety And Health Program,” for relief from JSC, NASA, NFPA, state, and federal requirements. Make sure the ORI committee also reviews the relief requests.

10.3.9 Final report

10.3.9.1 The final readiness review report shall include:

- a. Facility description
- b. Findings and recommendations with rationale, to include any dissenting opinions resolved by the AO.
- c. Any relief from recommendations or requirements.
- d. Action plan(s) showing completion of mandatory actions.*
- e. Recommendation to approve the facility for operation with rationale.*

* Added after actions are complete

10.3.10 Committee follow-up

The committee may reconvene for a follow-up at the request of the AO, committee chair, SMA, or facility management, especially if the facility uses human subjects in a vacuum or an oxygen-rich environment. Reviews may occur one time or periodically. If a followup occurs, the committee shall document the results, send them to the AO, and attach them to the final report.

10.3.11 Non-JSC facilities

10.3.11.1 Facility readiness reviews are done on non-JSC facilities as described in paragraph 10.3.3. If JSC has a contract or an agreement with a non-JSC organization as described in paragraph 10.3.3, the facility management shall:

- a. Send JSC a list of facilities believed to require a facility readiness review. Send this list within 14 days of signing the contract or agreement, or at any later time when you determine a facility readiness review is needed.
- b. The list shall include information to help JSC evaluate the facility, such as:
 - (1) A general description of the facility and its operations.
 - (2) What JSC project the facility supports.
- c. Follow this chapter with these exceptions:
 - (1) The person in charge of the site or a higher-level official will be the appointing official. He or she will fulfill the responsibilities of the appointing authority found in this chapter.
 - (2) Ensure committee members are equal in rank to JSC division and branch chiefs as described in paragraph 10.3.6. JSC will arrange for committee members from government organizations if necessary.
 - (3) The same committee members may participate in more than one review. However, keep the review for each facility and its records separate from reviews and records for other facilities.

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- d. Allow JSC to send qualified observers if necessary. These observers shall have access to all committee meetings and records.
- e. Send the final report to the Director, Safety and Mission Assurance. He or she shall send the report and his or her personal assessment of the facility's overall safety to the JSC Center Director. The report shall include all information on relief from mandatory ORI recommendations or URR action items and the schedule and due dates for corrective action on all mandatory and non-mandatory ORI recommendations or URR action items.
- f. Send a plan for post-facility readiness reviews recommended in paragraph 10.3.12 to the JSC Center Director and the Director, Safety and Mission Assurance.

10.3.12 Maintaining facility readiness review reports

The facility manager or lab manager shall keep a copy of the report as a part of the Facility Safety Management Process Documentation (see Chapter 10.4). The Safety and Mission Assurance director sends ORI reports to the NASA Headquarters Safety and Risk Management Division as requested. Resident Safety and Mission Assurance Offices will keep copies of facility readiness review reports for JSC remote sites.