

JSC Safety and Health Handbook	JPR No.	1700.1K
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Chapter 2.1 Pre-Use Analysis

2.1.1 Applicability of this chapter

You are required to follow this chapter if you are a line manager at any level.

2.1.2 Description of Sub-element 2.1

JSC shall analyze all newly acquired or altered facilities, processes, materials, equipment, or project phases before use begins to identify safety and health hazards, environmental impacts, and the means to prevent or control them. JSC line managers shall understand all safety and health hazards that their employees may be exposed to and how to control them.

2.1.3 Requirements

2.1.3.1 JSC handles pre-use analyses as follows:

- a. For new or modified facilities and proposed programs or projects (such as Construction of Facilities, and lesser funding levels):
 - (1) Safety, health, and fire protection engineers shall review the drawings and participate in design reviews. All new or modified facilities require at least acceptance inspections and tests of fire protection systems. See Chapter 10.1 of this Handbook for more details.
 - (2) You shall make sure an environmental review is done during the planning phase as described in JPR 8550.1, "JSC Environmental Compliance Procedural Requirements." The "environmental review" is required by the National Environmental Policy Act (NEPA) to identify and assess the potential environmental effects for proposed programs and projects. The Project Manager conducts the environmental review during the earliest planning stages, before the point when NASA's ability to implement reasonable alternatives is precluded.
- b. Hazardous, unique, or critical facilities require an operational readiness inspection or use readiness review as described in Chapter 10.3 of this Handbook. Hazard analyses are included.
- c. Less hazardous facilities may have a less rigorous readiness review that uses Chapter 10.3 of this Handbook as a guide. Hazard analyses are included. The following checklists are available to document a review and may be customized to the situation:
 - (1) New item checklist (NS-PA-CH03) at URL:
<https://jsc-sma-missp.jsc.nasa.gov/sites/safety/Checklists/Home.aspx>.
 - (2) Configuration change checklist (NS-PA-CH04) at URL:
<https://jsc-sma-missp.jsc.nasa.gov/sites/safety/Checklists/Home.aspx>.
- d. Ground tests that could pose hazards to test subjects or test personnel shall have a Test Readiness Review as described in Chapter 6.9 of this Handbook. Hazard analyses are included.
- e. Hazardous materials require a hazard analysis as described in Chapter 9.1 of this Handbook.

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- f. Employees in potentially hazardous jobs shall have a Job Hazard Analysis as described in Chapter 2.3 of this Handbook.
- g. Organizations that produce educational or outreach materials intended for distribution to the public or for publication on NASA websites shall have the materials and related operations reviewed by the Safety and Test Operations Division for hazards before use. This review shall include all educational products and those products used in outreach activities where instructions are provided that would allow the creation of a device or the completion of an experiment. Send the materials via e-mail to the JSC-TSO-Mailbox. The Safety and Test Operations Division shall:
 - (1) Review all associated links, products, and videos.
 - (2) Consider the ages of the proposed participants to the greatest extent possible.
 - (3) Determine if a separate safety section is required in either the instructor’s or student’s versions of the procedure due to the complexity of the activities proposed.
 - (4) Assess all potential activities that will create or transform energy from one type to another, and shall ensure that the instructions for the use of any energy sources are controlled to prevent injury to the participants. This assessment will also include tool use.
 - (5) Determine the need for embedded “Caution” or “Warning” statements.
 - (6) Provide written feedback on the product to the producing organization.

NOTE: Education or outreach presentations that do not involve demonstrations or provide instructions do not need to be reviewed (for example, presentations on the solar system or NASA missions).

NOTE: Organizations that produce these educational or outreach materials are encouraged to consult resources for age appropriate safety guidance from professional groups such as the National Science Teachers Association.

2.1.4 Responsibilities for pre-use analysis

- a. As a *line manager*, you are responsible for:
 - (1) Making sure the analyses in paragraph 2.1.3 above are done as required
 - (2) Making sure the Safety and Test Operations Division and the Occupational Health Branch are involved in evaluating any new facilities, equipment, materials, or processes and any changes to your facilities, equipment, materials, or processes
- b. The *Center Operations Directorate* is responsible for:
 - (1) Notifying the Safety and Test Operations Division and Occupational Health Branch of plans for new or modified facilities, and providing drawings and notice of design reviews.
 - (2) Conducting environmental reviews according to JPR 8550.1.
- c. The *Safety and Test Operations Division* and the *Occupational Health Branch* are responsible for:
 - (1) Reviewing facility drawings for safety and health

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(2) Supporting design reviews, Test Readiness Reviews, and operational readiness inspections as needed

d. The *Office of Education* is responsible for ensuring that JSC educational materials are reviewed by the Safety and Test Operations Division.

2.1.5 Safety and health records and documentation for pre-use analysis

a. For new or modified facilities, Center-level records include:

(1) Design review, acceptance test, and inspection documentation kept by the Center Operations Directorate

(2) Records of safety and health comments kept by the Safety and Test Operations Division or Occupational Health Branch

(3) Records of the NEPA environmental reviews kept by the Environmental Office

b. If an operational readiness inspection is done on a facility, the organization that owns the facility shall keep a copy of the operational readiness inspection package as described in Chapter 10.3 of this Handbook.

c. For less hazardous facilities, where a less rigorous readiness review was done, the organization that owns the facility shall keep a copy of the review package.

d. Organizations that do hazardous ground testing that could pose hazards shall keep Test Readiness Review documentation.

e. Hazard analysis, as described in Chapter 2.3 of this Handbook, also supports this sub-element.

NOTE: See Appendix F, Attachment 1.1A for details on records and documentation required by this Chapter.