

16.0 Major Environmental Considerations for Proposed Actions

All construction, rocket testing, and operations that may potentially impact environmental media, such as air, water, land, aquatic and biotic resources, endangered and threatened species, historic and cultural resources, and surrounding communities (as identified in the NASA Environmental Justice Implementation Plan) must be coordinated through NASA Environmental Management. All proposed actions for SSC environmental media and Environmental Justice considerations incorporate the use of the Preliminary Environmental Survey (PES), SSC Form # 696M, which can be found electronically.

16.1 Air Resources

When developing new projects at SSC, air pollution issues are considered. Any potential emissions of any compound must be considered to determine whether a modification to SSC's existing operating permit must be obtained, or whether a particular level of control technology has been mandated for a specific pollutant. Any project that may involve the use of CFC's, halons, methyl chloroform, carbon tetrachloride, and air toxins included in Title III of the Clean Air Act Amendments (CAAA) should be reconsidered to determine if suitable replacements for these compounds exist.

Under the State of Mississippi's Air Pollution Control Regulations, it is the responsibility of the facility to apply for the proper permit for any source of dust, fumes, mist, smoke, particulate matter, vapor, or gas, regardless of the quantity released. In view of the current state regulations and of developing regulations under the CAAA, air pollution issues must be considered at the beginning of any project-planning phase.

16.2 Water Resources

Erosion of surface soils during construction and land clearing for construction on the site needs to be addressed. Any project involving greater than five acres requires a stormwater permit and pollution prevention plan. Other activities using less than five acres should also follow common erosion protection procedures. Soil erosion could increase the turbidity, suspended solids, and color of the receiving waters. In addition, effluent discharges from testing, construction, and manufacturing result in surface water quality impacts. Potentially affected surface waters should be monitored analytically to determine impact.

16.3 Land Resources

A large percentage of the SSC facility has been delineated as wetlands by the U.S. Army Corps of Engineers (COE), therefore any proposed development at the facility will likely require a wetlands permit and must be coordinated with NASA Environmental Management.

At the present time, there is little development in the documented floodplains at SSC. Any future development must be coordinated through NASA Environmental Management and designed to avoid those floodplains, if at all possible. If no alternative exists to development within a floodplain, a floodplain/wetlands assessment must be included with the environmental assessment or environmental impact statement.

Contamination of soil could result from accidental spills, testing, or regular operations at the facility. Facility construction exposing soil could result in erosion or failure of the soils under excessive bearing pressure. Subsurface utilities and equipment are subject to corrosion due to the corrosive soils located throughout the site.

16.4 Aquatic and Biotic Resources

Any major project undertaken at SSC should include an evaluation of impacts to flora and fauna habitats. Projects should be designed to promote conservation of biotic habitats consistent with the conservation plans established by the Mississippi Department of Wildlife Conservation.

16.5 Threatened and Endangered Species

There are a significant number of threatened, endangered, and ranked species with ranges overlapping the SSC Fee Area and Buffer Zone within diverse habitats. Therefore, any development at the facility should include a survey for any species listed or ranked by USFWS or MDWFP that are likely to occur in the SSC area. Once a listed species is identified, the appropriate state or federal agency should be consulted regarding any activity that could affect the habitat of that species.

16.6 Solid and Hazardous Waste Management

The following is a summary of regulatory considerations for solid and hazardous waste management. Contact with NASA Environmental Management is encouraged to ensure that no proposed actions jeopardize compliance with NEPA, RCRA, EPCRA, or CERCLA regulations. Additionally, contact should be made with NASA Environmental Management for assistance in making any of these determinations.

- Will any new action under consideration result in changes to currently used methods for treating, storing, or disposing of solid waste or result in changes in quantity of waste generated or types of wastes generated?
- If new solid wastes will be generated, are these solid wastes excluded under 40 C.F.R., Section 261.4?
- Assuming that any new solid waste to be generated is not excluded, is the new solid waste a hazardous waste under RCRA? Refer to 40 C.F.R., Sections 261.20 - 261.24 for hazardous wastes defined by hazardous characteristics (ignitability, corrosivity, reactivity, or toxicity).
- Will the project recycle materials, change either the volume or type of materials recycled, or change the methods used for recycling? Has it been determined whether these materials to be recycled are solid or hazardous waste regulated under RCRA and whether this activity must be reported to EPA or to the State?
- Does any new activity have impact on any site that has been or is being investigated under the CERCLA program?
- Will any new activity result in the need for additional reporting under SARA and EPCRA?

Refer to the Hazardous Materials, Hazardous Waste, and Solid Waste Handbook for instructions on the preparation of MSDSs. The SSC Hazard Communication Standard Program and the SSC personnel training requirements are in place to ensure that emergency response and reporting and notification requirements are met.

16.7 Toxic Substances

The following are regulatory considerations for proposed projects involving chemical substances that are regulated under TSCA:

- Will any new action result in the use or disturbance of PCB's, asbestos, or other substances regulated under TSCA at SSC? If so, is the new action considered research and development activity?
- Will any new action impact areas at SSC already identified as having PCBs or ACM present?

If any of these considerations apply to the proposed project, then NASA Environmental Management should be contacted to discuss any measures needed to ensure NEPA and TSCA compliance.

16.8 Insecticides and Herbicides

If any proposed action would alter the planned use of chemicals to be stored on-site, NASA Environmental Management shall be contacted. Additionally, if a proposed action involves increased application of pesticides at SSC or application of a new pesticide, then NASA Environmental Management shall be contacted.

16.9 Radioactive Materials and Non-ionizing Radiation

The following are considerations for new ionizing and non-ionizing radiation sources that may be required for proposed projects.

- Will any new action result in the need for any new source of ionizing radiation to be used on-site?
- Will any new action result in the need for any new source of non-ionizing radiation to be used on-site?

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Positive response to either of these two questions requires immediate contact with NASA Environmental Management to ensure that no action jeopardizes compliance with NEPA, NRC, or State regulations.

16.10 Aboveground and Underground Storage Tanks

Plans for the installation of any new storage tanks or for the re-activation of an existing unused storage tank should be coordinated through NASA Environmental Management to determine whether the proposed tank system designs meet all existing storage tank regulations. Also, any out of service or empty tanks should be evaluated for closure. The UST regulations have requirements for tank closure.

16.11 Historic, Archaeological, and Cultural Resources

Before initiating new projects, especially projects that will require new construction, the impacts of the project on existing cultural resources should be considered. Once disturbed, the value of many historic and archaeological sites is lost. Because of their inclusion in the NRHP, the three test stands require special consideration. Any modification to these structures may initiate a Section 106 review to ensure that their historical value is protected. SSC construction contracts will contain language-requiring notification of the Contracting Officer of any potential archaeological finds discovered during construction.

16.12 Economic, Population, Transportation, and Employment Factors

It is anticipated that future plans at the facility will increase population slightly in the area. This in turn will impact site waste disposal, sewer systems, and groundwater wells.

Increased traffic from commuter and construction vehicles could potentially strain the local roads. In addition, increased transportation of facility materials could also have noticeable effects with congestion on roads and waterways. A potential for more accidents could exist due to an increase in traffic.

Schools, health services, law enforcement, and fire protection would also feel the effects of a population increase. Departments that are already understaffed would be further strained.

The NASA/SSC Environmental Justice Implementation Plan has been blended into normal business practices. The demographic data for the SSC area, which was obtained during the development of the Environmental Justice Implementation Plan will be utilized for identifying areas that require environmental justice considerations for future projects.

16.13 Noise and Vibration

Over the years of rocket testing at SSC, NASA has developed procedures to manage the effects of project-generated noise. A critical element of the noise management procedures is an estimation of noise level prior to commencement of noise generating activities. NASA has developed models for noise level prediction based upon atmospheric conditions. Any proposed action that may generate significant amounts of noise should estimate the effect and develop a program to manage the noise. The Facilities Master Plan should be consulted to ensure that manufacturing facilities and other continuous noise sources are located away from the more densely populated areas of the site to protect low ambient noise levels.

While seismic effects have been minimal at SSC, the potential for damage to property exists. Vibrations caused by proposed actions should also be evaluated to determine what, if any, effect the action would have on SSC and surrounding communities.