



National Aeronautics and  
Space Administration

**John C. Stennis Space Center**  
Stennis Space Center, MS 39529-6000

**SPD 8830.4 Rev. Basic-1**  
**August 2018**

## **COMPLIANCE IS MANDATORY**

### **John C. Stennis Space Center** **Policy Directive** **Facility Design Engineering Directive**



|   |                                  |             |
|---|----------------------------------|-------------|
| Stennis<br>Policy<br>Directive                        | SPD 8830.4                       | Basic-1     |
|   | <i>Number</i>                    | <i>Rev.</i> |
|   | Effective Date: August 31, 2018  |             |
|   | Expiration Date: August 31, 2023 |             |
| Responsible Office: RA00/NASA SSC Center Operations   |                                  |             |
| <b>SUBJECT: Facility Design Engineering Directive</b> |                                  |             |

## 1.0 POLICY

A design is required for any new facility or modification to an existing institutional, administrative, test support, test stand, resident agency or tenant facility that changes a facility as-built base-line drawing or the facility's capitalized value. This Stennis Policy Directive (SPD) establishes requirements for the deliverables associated with engineering designs at NASA Stennis Space Center (SSC). This SPD also assigns design management responsibility to the appropriate NASA SSC Directorate.

## 2.0 APPLICABILITY

a. This SPD applies to all NASA SSC organizations, resident agencies, tenants, contractors, subcontractors and architect and engineering (A&E) firms involved with facility design projects at SSC.

b. NASA SSC Directorates, resident agencies and tenants shall comply with the requirements of this SPD, ensure use of the correct version of this SPD and the documents it references and inform the appropriate organization of needed changes. Revisions or cancellation of this SPD shall be in accordance with SSC SPR 1400.1.

## 3.0 AUTHORITY

All documents shall be the latest version unless otherwise specified.

- a. NPD 8800.14, Policy for Real Estate Management
- b. NPD 8820.2, Design and Construction of Facilities
- c. NPR 7123.1, NASA Systems Engineering Processes and Requirements
- d. NPR 8800.15, Real Estate Management Program
- e. NPR 8820.2, Facility Project Requirements

## 4.0 APPLICABLE DOCUMENTS

All documents shall be the latest version unless otherwise specified.

- a. SPR 1400.1, Document Preparation, Numbering, and Management
- b. SSTD-8070-0001-CONFIG, SSC Facilities Engineering Documentation Standard

|   |                                  |             |
|---|----------------------------------|-------------|
| Stennis<br>Policy<br>Directive                        | SPD 8830.4                       | Basic-1     |
|   | <i>Number</i>                    | <i>Rev.</i> |
|   | Effective Date: August 31, 2018  |             |
|   | Expiration Date: August 31, 2023 |             |
| Responsible Office: RA00/NASA SSC Center Operations   |                                  |             |
| <b>SUBJECT: Facility Design Engineering Directive</b> |                                  |             |

- c. SSTD-8070-0002-CONFIG, SSC Facilities Drafting Manual
- d. SSTD-8070-0009-CONFIG, SSC Preparation of Form SSC-625, Certificate of Completion
- e. SSTD-8070-0010-CONFIG, Maintenance of the SSC System Operation and Maintenance Responsibility Database (SOMRD)
- f. SOI-8040-0001-FACENG, SSC Organization Instruction Construction Configuration Management
- g. SOI-8080-0009, Engineering and Test Directorate Design Reviews and Deliverables
- h. SOI-8080-0052, SSC Software Life Cycle and Development Process
- i. SCWI-8810-0001, Center Operations Design & Construction Project Management Division Project Planning, Design and Construction Work Instruction

## 5.0 RESPONSIBILITY

- a. Management of designs shall include maintaining design schedule, managing within approved scope and budget, complying with technical requirements and ensuring the design meets all applicable NASA and SSC documents (See Section 4).
- b. The NASA Design Manager for the project shall indicate technical approval of the design documents. Approval certifies that the design meets the scope (capability, schedule, and cost) of the approved project as described on the project documents. Electronic signatures, electronic approvals and ink signatures are all acceptable forms of approval.
- c. All SSC base contractor developed designs should be approved and routed electronically. Offsite firms should deliver electronic files which then should be routed for onsite review and approval.
- d. Changes to design documentation in the construction phase should be routed for electronic approval per SOI-8040-0001-FACENG and any other documents that covers the FCR process.
- e. Engineering and Test Directorate Design and Analysis Division: Designs that affect Technical Systems or Specialized Mechanical & Distribution Systems that support Test Critical Operations located in the Propulsion Test Area will be managed by NASA SSC Engineering and Test Directorate (E&TD) Design and Analysis Division. For the purpose of this SPD, the Propulsion Test Area is defined as the areas that require Test Complex badge access clearance.

|   |                                  |             |
|---|----------------------------------|-------------|
| Stennis<br>Policy<br>Directive                        | SPD 8830.4                       | Basic-1     |
|   | <i>Number</i>                    | <i>Rev.</i> |
|   | Effective Date: August 31, 2018  |             |
|   | Expiration Date: August 31, 2023 |             |
| Responsible Office: RA00/NASA SSC Center Operations   |                                  |             |
| <b>SUBJECT: Facility Design Engineering Directive</b> |                                  |             |

Design of Technical Systems or Specialized Mechanical & Distribution Systems to be managed by NASA SSC E&TD Design and Analysis Division are listed below. The following was presented by the Project Directorate in the Joint Management Council meeting held on August 16, 2011 and documented in the memorandum "JMC Decision Regarding Configuration Management – CoF Test Complex Responsibilities" dated September 18, 2011. This is the notional technical systems list as presented:

- Test Operations Communication Systems
- Data Acquisition & Processing Systems
- Control Systems
- Fire & Gas Detection
- Specialized Power Systems
- Specialized Mechanical & Distribution Systems that support test critical operations
  - LH/LOX Transfer Systems (Cryogenics Facility, Barges & Distribution Systems)
  - High Pressure Gas Distribution Systems (Air, GH, GN, GHe)
  - Power Back-Up Systems (Generator, UPS)
  - High Pressure Industrial Water Pumps and Distribution System

f. Center Operations Directorate Design and Construction Project Management Division: Designs that affect new construction or modification of facilities (other than those per 5.e. above) will be managed by NASA SSC Center Operations Directorate (COD) Design and Construction Project Management Division (PMD).

g. For designs that do not clearly fall into one of the above categories, the NASA SSC Chief Engineer will decide which Directorate will manage the design.

## 6.0 REQUIREMENTS

For projects that impact SSC Real Property, the requirements of NPR 8820.2 are to be followed. The following list contains what is required for completed design packages:

1. Copy of Design Package Submittal Letter
2. Package Index Sheet (SSC-151A)
3. Copy of SWR or other funding document for design and construction
4. Approved drawings
5. Project Management Plan, as required per NPR 8820.2 (original and all revisions)
6. State of Work (SOW)
7. Design calculations
8. Correspondence of Kick-off, Design/Peer review & other supporting correspondence
9. Documentation showing all comments from Design & Peer reviews have been addressed
10. EO Sheet (SSC-151D, when applicable)
11. ECR (SSC-650, when applicable)

|   |                                  |             |
|---|----------------------------------|-------------|
| Stennis<br>Policy<br>Directive                        | SPD 8830.4                       | Basic-1     |
|   | <i>Number</i>                    | <i>Rev.</i> |
|   | Effective Date: August 31, 2018  |             |
|   | Expiration Date: August 31, 2023 |             |
| Responsible Office: RA00/NASA SSC Center Operations   |                                  |             |
| <b>SUBJECT: Facility Design Engineering Directive</b> |                                  |             |

12. Certificate of Completion (SSC-625, per SSTD-8070-0009-CONFIG)
13. Procurement and/or construction specifications (when applicable)
14. Detailed cost estimate
15. Material List (Shop Package)
16. Preliminary Environmental Survey SSC-696M with Record of Environmental Compliance from NASA Environmental
17. All pertinent correspondence and vendor data
18. NASA Form 1509 (if construction estimate is \$25,000 or greater)
19. NASA Form 1510 (if construction estimate is \$75,000 or greater)
20. NASA Form 1046/1707
21. SSC-728, Facility Equipment List

## 6.0 MEASUREMENT/VERIFICATION

Compliance with the requirements contained in this document will be verified through audits, observations, and/or self-assessments.

## 7.0 CANCELLATION

None.

### *Signature on file*

Richard J. Gilbrech, Ph.D.  
Director

## DISTRIBUTION

Approved for public release via NODIS and TechDoc; distribution is unlimited.