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COMPLIANCE IS MANDATORY

John C. Stennis Space Center HVAC AND DOMESTIC HOT WATER DESIGN STANDARD

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		Page 2 of 14
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SUBJECT: HVAC and Domestic Hot Water Design Standard		

Document History Log

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Basic		Donnie Thompson, x8-1641.	Initial release. Supersedes SSC Standard 50-001.
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Stennis Standard	SSTD-8070-0084-EMCS	A
	Number	Rev.
	Effective Date: November 3, 2014	
	Review Date: November 3, 2019	
		Page 3 of 14
Responsible Office: NASA SSC Center Operations Directorate		
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Table of Contents

1.0	PURPOSE	4
2.0	APPLICABILITY	4
3.0	REFERENCES AND APPLICABLE DOCUMENTS	4
4.0	RESPONSIBILITIES	5
5.0	REQUIREMENTS FOR HVAC DESIGN	5
5.1	GENERAL	5
5.2	HEATING	6
5.3	VENTILATION	7
5.4	COOLING	7
5.4.1	General	7
5.4.2	Cooling with Outdoor Air (Economizer Cycle)	8
5.5	OTHER HVAC REQUIREMENTS	9
5.5.1	Controls	9
5.5.2	Insulation	9
5.5.3	Cooling Towers	10
5.5.4	Water Treatment	10
5.5.5	Filtration	10
5.5.6	Air Handling Units	11
5.5.7	Electric Motors	11
6.0	GENERAL REQUIREMENTS FOR DOMESTIC HOT WATER DESIGN	11
7.0	SAFETY	13
8.0	CONFORMANCE/COMPLIANCE	13
9.0	RECORDS AND FORMS	13
	APPENDIX A - ACRONYMS AND ABBREVIATIONS	14

Stennis Standard	SSTD-8070-0084-EMCS	A
	<i>Number</i>	<i>Rev.</i>
	Effective Date: November 3, 2014	
	Review Date: November 3, 2019	
		Page 4 of 14
Responsible Office: NASA SSC Center Operations Directorate		
SUBJECT: HVAC and Domestic Hot Water Design Standard		

1.0 PURPOSE

This standard establishes the requirements for design of heating, ventilation, and air conditioning (HVAC) systems as well as domestic hot water systems at the John C. Stennis Space Center (SSC).

The limits given conform to federally mandated energy conservation standards per National Aeronautics and Space Administration (NASA) Policy Directive (NPD) 8820.2, and to best known local factors.

2.0 APPLICABILITY

This SSC standard (SSTD) is applicable to NASA/SSC personnel, SSC contractors, and resident agencies.

This SSTD is applicable to all HVAC and domestic hot water projects in new construction as well as building, HVAC and domestic hot water renovations, regardless of size.

3.0 REFERENCES AND APPLICABLE DOCUMENTS

All references are assumed to be the latest version unless otherwise indicated.

NPD 8820.2, *Design and Construction of Facilities*

NPR 8820.2, *Facility Project Requirements*

ASHRAE Handbook of Fundamentals

ASHRAE Standard 55, *Thermal Environmental Conditions for Human Occupancy*

ASHRAE Standard 62.1, *Ventilation for Acceptable Indoor Air Quality*

ASHRAE Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*

SPR 1440.1, *Records Management Program Requirements*

SSTD-8070-0005-CONFIG, *Preparation, Review, Approval and Release of SSC Standards*

ASTM E2204-05e1, *Standard Guide for Summarizing the Economic Impacts of Building-Related Projects*

ASTM E917-05, *Standard Practice for Measuring Life-Cycle Costs of Buildings and Building Systems*

Executive Order 13514 *Implementation Support Federal Leadership in Environmental, Energy, and Economic Performance*

Energy Independence and Security Act of 2007

Stennis Standard	SSTD-8070-0084-EMCS	A
	<i>Number</i>	<i>Rev.</i>
	Effective Date: November 3, 2014	
	Review Date: November 3, 2019	
		Page 5 of 14
Responsible Office: NASA SSC Center Operations Directorate		
SUBJECT: HVAC and Domestic Hot Water Design Standard		

4.0 RESPONSIBILITIES

- a. NASA is required to construct new buildings and perform major renovations that meet or exceed current federal regulations, which specify energy efficiency levels. Since the HVAC system, and to a certain extent the domestic hot water system, are significant energy users in most buildings, it is imperative that the designer utilize the most efficient equipment and systems that are currently available.
- b. The designer shall coordinate with other design disciplines to incorporate design features that minimize energy consumption.
- c. Users of this SSTD shall comply with its requirements, ensure use of the correct version of this standard and the documents it references, and inform the appropriate organization of needed changes in accordance with SSTD-8070-0005-CONFIG.
- d. Responsibilities for the use and control of this SSTD and for the review and approval of revisions or cancellation of this standard shall be as specified in SSTD-8070-0005-CONFIG and the applicable documents referenced therein.

5.0 REQUIREMENTS FOR HVAC DESIGN

5.1 GENERAL

- a. The designer shall strictly adhere to American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) requirements, accepted industry standards, and sound engineering practices in the design of all HVAC systems.
- b. Each specific area of a building shall be carefully evaluated for its specific HVAC requirements.
- c. HVAC systems shall be designed in accordance with ASHRAE 90.1 so that energy consumption is minimized.
- d. Life-Cycle Cost Analysis (LCCA), as referenced, shall be conducted for HVAC systems.
- e. The simultaneous operation of heating and cooling equipment for dehumidification purposes should not be allowed. However, if necessary, ASHRAE 90.1 shall be followed.
- f. When the building is not continuously occupied, separate HVAC equipment shall be installed for areas that require uninterrupted conditioning.