TEXAS UTILITIES SERVICES INC.	INSTRUCTION	REVISION	ISSUE DATE	PAGE
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TECHNICAL SERVICES ENGINEERING INSTRUCTION FOR PIPE HANGER DESIGN REVIEW AND CERTIFICATION	PREPARED BY			
	APPROVED BY 10/11/83			

1.0 REFERENCES

1-A CP-EP-4.5 Design Verification
1-B CP-EI-4.5-1 General Program for As-built Piping Verification

2.0 GENERAL

2.1 PURPOSE

To establish a program for design review and vendor certification for large bore pipe supports.

2.2 SCOPE

~~This instruction shall apply to design changes generated on site for ITT Grinnell and NPSI designed pipe supports only.~~

2.3 DEFINITIONS

TSDRE - Technical Services Design Review Engineering

TSFC - Technical Services File Clerk

PSE - Pipe Support Engineering

TSMD - Technical Services Mechanical Drafting Department

BRH - Brown & Root Controlled Hanger Drawing

VCDI - Vendor Certification Drafting Instructions

DCC - Document Control Center

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2.4 RESPONSIBILITIES

The CPP Mechanical Engineer (who reports to the Engineering Manager) is responsible for providing technical direction and administrative guidance to the CPP Mechanical Engineering organization of which the Technical Services Group is a part.

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The Technical Services Group Supervisor is responsible for assuring that activities within the purpose and scope of this instruction are completed in accordance with the measures described herein.

The TSDRE Supervisor is responsible for implementation of this instruction. The TSDRE Supervisor shall coordinate work flow through the group, interface activities, and maintain adequate tracking mechanisms to assure positive control of activities addressed in this instruction in accordance with Reference 1-A.

3.0 INSTRUCTION

3.1 DESIGN REVIEW

3.1.1 General

Seismic supports which are not within as-built scope, as defined in Reference 1-B, shall be reviewed for structural acceptability and compliance with applicable code requirements. Review shall be performed by representatives of the original design organizations in accordance with their respective engineering programs. Design review may be done on-site or off-site at the pipe support vendor's home office.

3.1.2 Design Change Acceptable

Design change documents found to be acceptable shall be listed on the design review cover sheet for input into the tracking system. Cover sheets shall be stamped "Design Reviewed" and signed or initialed by the cognizant engineer. Completed review packages shall be returned to the TSFC for logging and storage.

3.1.3 Design Change Unacceptable

PSE/Task Force shall be notified by three part memo of design changes found to be unacceptable. Memos shall be logged and tracked by TSFC. Engineering resolution by PSE/Task Force shall be in accordance with the appropriate engineering procedure/instruction.

3.2 VENDOR CERTIFICATION (Non-Class 1 Supports)

3.2.1 General

[redacted] (except as noted in Section 3.2.1.1). Supports shall then undergo a final check to assure overall compliance with applicable codes, site, and vendor engineering requirements.

3.2.1.1 Variable and constant type supports on high temperature lines in the Turbine Building shall be reviewed per the following criteria:

(a) Cold Load (CL) shall be based on actual field conditions and shall be supplied by PSE.

(b) Thermal operating displacements shall be extracted from the applicable as-built analysis.

(c) Hot Load (HL) shall be calculated from information in (a) and (b), above.

The TSDRE Supervisor shall maintain a log of supports reviewed to this criteria.

3.2.2 Final Design Acceptable — CMCS

3.2.2.1 Acceptable hanger packages shall be transmitted to TSMD to assure applicable as-built information, as listed on the VCDI, is incorporated into the final BRH. The BRH shall be stamped "Vendor Certified" and, upon return to TSDRE, signed or initialed by the designated vendor engineering representative.

3.2.2.2 Certified hanger packages shall be forwarded to TSFC for disposition.

Hanger drawings shall be issued for distribution by DCC and calculation packages shall be filed by the TSFC.

3.2.3 Final Design Unacceptable

Unacceptable hanger packages shall be dispositioned as outlined in Section 3.1.3.

3.3 VENDOR CERTIFICATION (Class 1 Supports)

3.3.1 General

Upon completion of as-built stress analysis, Class 1 pipe supports shall be reviewed at NPSI's home office to assure compatibility between final stress analysis and final support design. Class 1 supports shall undergo a final check to assure overall compliance with applicable codes, site, and vendor engineering requirements. A stress report shall be prepared for each Class 1 support.

3.3.2 Final Design Acceptable

3.3.2.1 VDCI's for acceptable hanger packages shall be transmitted from the NPSI home office to site. The hanger package shall be forwarded to TSMD to assure all applicable as-built information, as listed on the VCDI, is incorporated into the final BRH. The BRH shall be stamped "Vendor Certified" and, upon return to TSDRE, signed or initialed by the designated NPSI representative. A copy of the vendor certified BRH will be sent to the NPSI home office where the PE shall complete his review and certify the hanger stress report. A copy of the certified hanger stress report, showing as-built stiffness, shall be returned to the site.

3.3.2.2 Certified Class 1 hanger packages shall be dispositioned as outlined in section 3.2.2.2.

3.3.3 Final Design Unacceptable

Unacceptable Class 1 hanger packages shall be dispositioned as outlined in Section 3.1.3.

3.4 FUNCTIONAL REVIEW

3.4.1 General

Pipe supports within as-built scope, as defined in Reference 1-B, may undergo a functional review prior to issuance of the applicable as-built stress analysis. Such review will be to verify that the support is structurally adequate for the design loads given on the BRH and in compliance with applicable code requirements.

3.4.2 Functionally Acceptable

3.4.2.1 Acceptable hanger packages shall be transmitted to TSMD to assure all design changes and other applicable information are incorporated onto the BRH. The BRH shall be stamped "Functionally Reviewed" and, upon return to TSDRE, signed or initialed by the designated vendor engineering representative.

3.4.2.2 Completed hanger packages shall be dispositioned as outlined in Section 3.2.2.2.

3.4.3 Functionally Unacceptable

Unacceptable hanger packages shall be dispositioned as outlined in Section 3.1.3.