

DEP SPECIFICATION

MATERIALS AND FABRICATION REQUIREMENTS FOR 2 $\frac{1}{4}$ Cr-1Mo, 2 $\frac{1}{4}$ Cr-1Mo- $\frac{1}{4}$ V, 3Cr-1Mo & 3Cr-1Mo- $\frac{1}{4}$ V HEAVY WALL PRESSURE VESSELS (AMENDMENTS/SUPPLEMENTS TO API RP 934-A)

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DESIGN AND ENGINEERING PRACTICE

DEM1



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PART I INTRODUCTION

1.1 SCOPE

This DEP specifies requirements and gives recommendations for materials and fabrication requirements for 2¼Cr-1Mo, 2¼Cr-1Mo-¼V, 3Cr-1Mo, & 3Cr-1Mo-¼V steel heavy wall pressure vessels for high temperature, high pressure hydrogen service.

This DEP is based on API 934-A, 2nd edition May 2008, and Addendum 1, February 2010. Part III of this DEP is written in the form of amendments and supplements to API RP 934-A and Addendum 1, February 2010. As such this DEP is only for vessels fabricated to ASME BPVC, Section VIII.

This DEP contains mandatory requirements to mitigate process safety risks in accordance with Design Engineering Manual DEM 1 – Application of Technical Standards.

This is a revision of the DEP of the same number dated February 2012; see (1.5) regarding the changes.

1.2 DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS

Unless otherwise authorised by Shell GSI, the distribution of this DEP is confined to Shell companies and, where necessary, to Contractors and Manufacturers/Suppliers nominated by them. Any authorised access to DEPs does not for that reason constitute an authorization to any documents, data or information to which the DEPs may refer.

This DEP is intended for use in facilities related to oil and gas production, gas handling, oil refining, chemical processing and gasification. This DEP may also be applied in other similar facilities.

When DEPs are applied, a Management of Change (MOC) process should be implemented; this is of particular importance when existing facilities are to be modified.

If national and/or local regulations exist in which some of the requirements could be more stringent than in this DEP, the Contractor shall determine by careful scrutiny which of the requirements are the more stringent and which combination of requirements will be acceptable with regards to the safety, environmental, economic and legal aspects. In all cases the Contractor shall inform the Principal of any deviation from the requirements of this DEP which is considered to be necessary in order to comply with national and/or local regulations. The Principal may then negotiate with the Authorities concerned, the objective being to obtain agreement to follow this DEP as closely as possible.

1.3 DEFINITIONS

1.3.1 GENERAL DEFINITIONS

The **Contractor** is the party that carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project or operation of a facility. The Principal may undertake all or part of the duties of the Contractor.

The **Manufacturer/Supplier** is the party that manufactures or supplies equipment and services to perform the duties specified by the Contractor.

The **Principal** is the party that initiates the project and ultimately pays for it. The Principal may also include an agent or consultant authorised to act for, and on behalf of, the Principal.

The word **shall** indicates a requirement.

The capitalised term **SHALL [PS]** indicates a process safety requirement.

The word **should** indicates a recommendation.

The word **may** indicates a permitted option.