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NATIONAL IRANIAN OIL REFINING & DISTRIBUTION COMPANY
NATIONAL IRANIAN OIL ENGINEERING
& CONSTRUCTION COMPANY

NIOEC SP

NIOEC SPECIFICATION FOR PIG LAUNCHING AND RECEIVING TRAPS

FIRST EDITION

OCTOBER, 2005

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IN THE NAME OF GOD**FOREWORD**

By their very nature, technical Specifications are continuously subject to modifications and revisions. To strengthen their merit and usefulness, continuous improvements, addendum, deletion of disparate information and consequently provision of updated revisions are to be made in order to ascertain that such Specifications meet the current requirements, inclusive of Iranian Petroleum Standards (IPS) and the recognized and acceptable national and international Standards, as well as the optimal codes and practices based on the accumulated in-house know-how and plant knowledge and experiences.

However, in reality, due to several reasons, not to mention the complexity of the matter, the ultimate goal of continuous direct embedment of the required changes on the relevant Specifications may be far reaching. Therefore, in the interim periods between the officially issued revisions, the required changes will appear in other documents related to the engineering and design work of the ongoing projects.

In response to the initiative of the Design and Engineering Directorate, and considering that the task of the execution of several important and mega projects for the realization of the new oil refineries, pipelines and oil terminals as well as improvements of the existing facilities, has been assigned to NIOEC, it was decided to update the NIOEC Specifications and to issue new official revisions.

The Design and Engineering Directorate was itself entrusted to carry out this important task, and as such by forming several special technical committees, working in close co-operation and cohesion and sharing their expertise and knowledge, the updated and revised NIOEC Specifications were successfully prepared and complied.

These Specifications are intended to be used for Oil Refineries, Distribution Depots, Oil Terminals, Pipelines and Pump Stations within NIOEC's projects, and have been proven to be of high value for such purposes. It must however be appreciated that these Specifications represent the minimum requirements and should in no way be interpreted as a restriction on the use of better procedures, engineering and design practices or materials.

We encourage and highly appreciate the users and other clear sighted and experts to send their comments on the Specifications to the Design and Engineering Director of NIOEC for evaluation and approval.

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NOTES:

- 1) THIS SHEET IS A RECORD OF ALL REVISIONS TO THIS SPECIFICATION.
- 2) WHEN APPROVED EACH REVISION SHALL BE CONSIDERED AS A PART OF THE ORIGINAL DOCUMENT.
- 3) NUMBER OF PAGES EXCLUDES THIS SHEET AND THE COVER SHEET.

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1	September, 2015	M. HASANPOUR	M.R.HABIBZADEH	M.KARGAR NAJAFI	A.ARMAN MOGHADAM
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INTRODUCTION

To satisfy the requirements of this NIOEC Specification, Iranian Petroleum Standard IPS-M-PI-130 (Nov., 2014) with the modifications as specified herein after shall be strictly followed.

Articles 1 through 3 of this document replace entirely the related articles in the referenced IPS Standard.

1. SCOPE

This Specification covers minimum technical requirements for design, manufacture, quality control, testing and finishing of pig launching and receiving traps which shall be installed in oil, industries.

Deviations from this specification will only be permitted on obtaining written approval from NIOEC.

Resolution on cases not explicitly stipulated in this Specification, or on cases where conflicts may arise among the requirements of the referenced IPS and the international standards, shall be made through written consent and approval of NIOEC.

2. REFERENCES

The following standards, codes, and specifications, to the extent specified hereinafter, shall constitute a part of this NIOEC Specification. Latest edition of the undated referenced documents and the cited edition of the dated references shall apply. The applicability of changes made to the dated references ,after the cited date shall be mutually agreed upon between NIOEC and the vendor/contractor.

ASME (AMERICAN SOCIETY OF MECHANICAL ENGINEERS)

Section VIII	"Rules for Construction of Pressure Vessels"
Section V	"Non-Destructive Examination"
Section IX	"Qualification STD. for Welding and Brazing Procedures"
Section II	"Material Specification"
B16.5	"Steel Pipe Flanges and Flanged Fittings"
B16.25	"Butt Welding Ends"
B31.8	"Gas Transmission & Distribution Systems"
B31.4	"Liquid Transportation System for Hydrocarbons"

ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIAL)

A193/A193M	"Specification for Alloy Steel and Stainless Steel Bolting Materials for High Temperature Services"
A194/A194M	"Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure and High Temperature Service"
E92	"Test Method for Vickers Hardness of Metallic Materials"

API (AMERICAN PETROLEUM INSTITUTE)

5L	"Specification for Line Pipe"
1104	"Welding of Pipelines and Related Facilities"

BSI (BRITISH STANDARD INSTITUTION)

BS 5500 "Specification for Unfired Fusion Welded Pressure Vessel"

BS 1133 "Packaging code"

IP (INSTITUTE OF PETROLEUM)

Part 15 "Model Code of Safe Practice Electrical Part 1"

NACE (NATIONAL ASSOCIATION OF CORROSION ENGINEERS)

MR 0175 "Sulphide Stress Cracking Resistant Metallic Materials for Oil Field Equipment"

IPS (IRANIAN PETROLEUM STANDARDS)

IPS-M-PI-130 "Material and Equipment Standard for Pig Launching and Receiving Traps"

IPS-E-TP-100 "Engineering Standard for Painting"

IPS-C-TP-102 "Construction Standard for Painting"

IPS-M-PI-190 "Material Standard for Line Pipe"

IPS-M-PI-150 "Material Standard for Flanges and Fittings"

NIOEC SIP (SHOP INSPECTION PROCEDURES)

NIOEC-SIP-41-03 "Shop Inspection Procedure for Pressure Vessel"

NIOEC SP (NIOEC SPECIFICATIONS)

NIOEC-SP-00-10 "NIOEC Specification for Units"

NIOEC-SP-80-02 "NIOEC Specification for Painting"

NIOEC-SP-50-51 "NIOEC Specification for Line Pipe"

NIOEC-SP-50-10 "NIOEC Specification for Flanges"

NIOEC-SP-50-11 "NIOEC Specification for Fittings"

2.1. Equivalent to IPS Standard

Substitute the following IPS Standards as referred to throughout IPS-M-PI-130 to relevant NIOEC's Specifications as follows:

IPS StandardRelevant NIOEC Specification

IPS-E-TP-100 & 102

NIOEC-SP-80-02

IPS-M-PI-150

NIOEC-SP-50-10 & 11

IPS-M-PI-190

NIOEC-SP-50-51

2.2. Substitution

Substitute ANSI with ASME wherever in the IPS associated.

3. UNITS

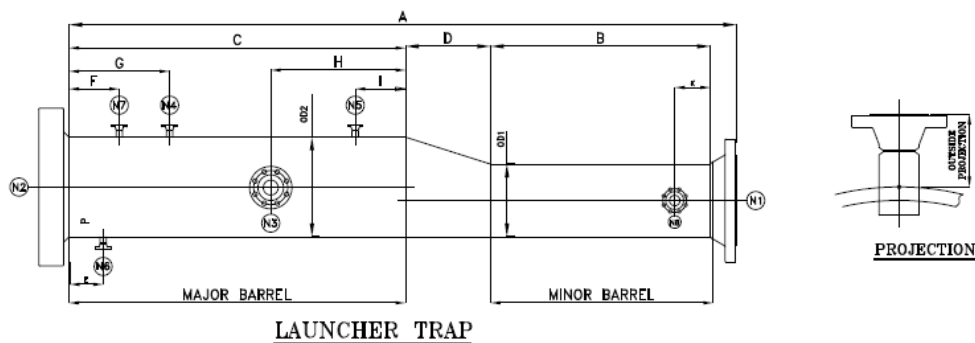
International system of units (SI) shall be used in accordance with NIOEC-SP-00-10, unless otherwise specified.

4. MODIFICATION TO IPS-M-PI-130**5.2.3.3. Balance Line (Addition)**

A balance line shall be provided on launchers to enable filling and pressurising of the barrel on both sides of the pig at the same time. This is to prevent a pig which is ready to be launched from moving either forwards (and thereby hitting and possibly damaging the pig trap valve) or backwards (and losing the seal in the reducer). To ensure this, the balance line, branching off from the kicker line, shall be connected to the minor barrel as close as possible to the pig trap valve. A balance line shall also be provided on receivers to prevent on receivers to prevent any possible pressure differential across a received pig.

The diameter of the balance line should be 50 mm (2 inch) for pipelines having a nominal diameter of less than 350 mm (14 inch), and 100 mm (4 inch) for larger size pipelines.

Appendix C & D (Substitution):

APPENDIX C
PIG LAUNCHING TRAP

DIMENSIONS OF LAUNCHER TRAPS

OD1	OD2	A	B	C	D	E	F	G	H	I	J	K
NPS	NPS											
*												

List of Nozzle

ITEM	SIZE (Inch.)	NOZZLE DESCRIPTION	FLANGES			PROJ. (mm)	REINFORCING PAD		REMARKS
			RATING	TYPE	FACING		O.D.	THK.	
** N1		MAIN LINE CONNECTION							
N2		QUICK OPEN CLOSURE							
N3		KICK OFF							
N4		VENT							
N5		TSV							
N6		DRAIN							
N7		PRESSURE GAUGE							
N8		Balance line							
*** N9		PIG SIGNALER							

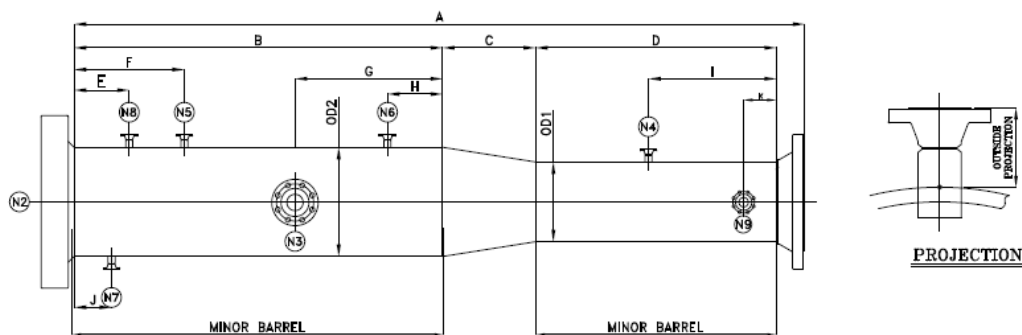
* If beveled end spool piece is required shall be specified.

** Will be installed on main line scraper launching, if specified by the purchaser.

*** Dimensions "a" to "z" shall be specified by the manufacturer and confirmed by the purchaser

APPENDIX D

PIG RECEIVING TRAP



RECEIVER TRAP

DIMENSIONS OF RECEIVER TRAPS

OD1	OD2	A	B	C	D	E	F	G	H	I	J	K
NPS	NPS											

List of Nozzles

ITEM	SIZE (Inch.)	NOZZLE DESCRIPTION	FLANGES			PROJ. (mm)	REINFORCING PAD		REMARKS
			RATING	TYPE	FACING		O.D.	THK.	
**	N1	MAIN LINE CONNECTION							
	N2	QUICK OPEN CLOSURE							
	N3	BY PASS							
	N4	PIG SIGNALER							
***	N5	VENT							
	N6	TSV							
	N7	DRAIN							
	N8	PRESSURE GAUGE							
	N9	Balance Line							

* If beveled end spool piece is required shall be specified.

** Will be installed on main line scraper receiving.

*** Dimensions "a" to "z" shall be specified by the manufacturer and confirmed by the purchaser.

MATERIAL AND EQUIPMENT STANDARD**FOR****PIG LAUNCHING AND RECEIVING TRAPS****FIRST EDITION****JUNE 2002**

This standard specification is reviewed and updated by the relevant technical committee on Nov. 2014. The approved modifications are included in the present issue of IPS.

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