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

NIOEC SP

NIOEC SPECIFICATION FOR SUPPORTING STRUCTURES AND FOUNDATIONS FOR MACHINERY

SECOND EDITION

DECEMBER, 2014

THIS SPECIFICATION IS THE PROPERTY OF NATIONAL IRANIAN OIL ENGINEERING & CONSTRUCTION COMPANY. IT IS CONFIDENTIAL AND ALL RIGHTS RESERVED TO THE OWNER. NEITHER WHOLE NOR ANY PART OF THIS DOCUMENT MAY BE DISCLOSED TO ANY THIRD PARTY, REPRODUCED, STORED IN ANY RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN CONSENT OF THE NATIONAL IRANIAN OIL ENGINEERING & CONSTRUCTION COMPANY.

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 on going 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.

REVISION INDEX

REV. PAGE	1	2	3	4	5	REV. PAGE	1	2	3	4	5	REV. PAGE	1	2	3	4	5	REV. PAGE	1	2	3	4	5
1		x				26						51						76					
2		x				27						52						77					
3	x	x				28						53						78					
4		x				29						54						79					
5		x				30						55						80					
6		x				31						56						81					
7		x				32						57						82					
8		x				33						58						83					
9	x	x				34						59						84					
10	x	x				35						60						85					
11	x	x				36						61						86					
12	x	x				37						62						87					
13		x				38						63						88					
14		x				39						64						89					
15		x				40						65						90					
16		x				41						66						91					
17		x				42						67						92					
18						43						68						93					
19						44						69						94					
20						45						70						95					
21						46						71						96					
22						47						72						97					
23						48						73						98					
24						49						74						99					
25						50						75						100					

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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3					
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CONTENTS:	PAGE NO.
1. SCOPE.....	3
2. REFERENCES	3
3. UNITS.....	4
4. GENERAL	4
4.1. Typical Foundations for Vibrating Machinery (ACI351.3R)	4
4.2. Analysis and Design Methods.....	5
5. RULE-OF-THUMB METHOD FOR LIGHT MACHINERY	5
5.1. Shape and Principal Dimension of Foundations	5
5.2. Spread Foundation	5
5.3. Pile Supported Foundation.....	5
5.4. Thickness of Foundation (Rigid Foundation)	5
5.5. Supplementary requirements for Rotary Machinery	6
5.6. Supplementary Requirements for Reciprocating Machinery	6
6. DYNAMIC ANALYSIS AND DESIGN CRITERIA FOR HEAVY MACHINERY	6
6.1. Criteria for Judgment	7
6.2. Supplementary Requirement	8
6.3. Dynamic Analysis of Massive Foundations.....	8
6.4. Dynamic Analysis of Frame Foundation.....	9
6.5. Soil Parameters.....	9
6.6. Pile Spring Constants and Damping Ratio	11
6.7. Evaluation of Results of Dynamic Method.....	11
7. GROUTING FOR SUPPORT OF MACHINERY.....	11
7.1 Properties of Grout	11
7.2 Nonshrink Cementitious Grouts	11
7.2.1 Volume-Change	12
7.2.2 Strength	12
7.2.3 Durability	12
7.3 Epoxy Grouts	12
7.3.1 Volume-Change	12
7.3.2 Strength	13
7.3.3 Durability	13
7.4 Grouting Considerations for Foundations Design and Detailing	13
7.4.1 Machine or Equipment Bases.....	13

7.4.2 Concrete Foundation.....	14
7.4.3 Anchorage Design.....	14
7.4.4 Clearances	14
APPENDIX	15

1. SCOPE

The following mandatory requirements shall govern the design and testing of supporting structures and foundations for any equipment having reciprocating or rotary masses as the major moving parts such as reciprocating or rotary compressors, pumps, engines and turbines.

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/relevant 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.

NIOEC- SP (NIOEC SPECIFICATIONS)

NIOEC-SP-00-10	“NIOEC Specification for Units”
NIOEC-SP-10-01	“NIOEC Specification for Concrete”

NIOEC STANDARD DRAWINGS

NIOEC-SD-1000-1/7~7/7-A4	“Anchor Bolts”
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ACI (AMERICAN CONCRETE INSTITUTE)

ACI 347-04	“Guide to Formwork for Concrete”
ACI 304.6R-09	“Guide for Use of Volumetric Measuring and Continuous-Mixing Concrete Equipment”
ACI 351.1R-12	“Report on Grouting Between Foundations and Bases for Support of Equipment and Machinery”
ACI 351.3R-04(Re.2011)	“Foundation for Dynamic Equipment”

ASTM (AMERICAN SOCIETY OF TESTING AND MATERIALS)

ASTM C 150-12	“Standard Specification for Portland Cement”
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IRANIAN SEISMIC DESIGN CODE FOR OIL INDUSTRIES

ISDCOL.PN038	“Iranian Seismic Code for Industrial”
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“Design of Structures and Foundations for Vibrating Machines”

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