ASME NOG-1–2020

(Revision of ASME NOG-1–2015)

Rules for Construction of Overhead and Gantry Cranes (Top Running Bridge, Multiple Girder)

AN AMERICAN NATIONAL STANDARD

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FOREWORD

The Committee on Cranes for Nuclear Power Plants was first established in 1976. In 1980, the name and scope of the Committee were revised from the Committee on Cranes for Nuclear Power Plants to the Committee on Cranes for Nuclear Facilities.

This Standard or portions thereof can be applied to cranes at facilities other than nuclear where enhanced crane safety may be required, and can be provided by means of either single-failure-proof features or a seismic design.

The first edition of NOG-1 was approved in 1983, the second in 1989, the third in 1995, the fourth in 1999, the fifth in 2002, the sixth in 2004, the seventh in 2010, and the eighth in 2015. This 2020 edition contains revisions made since the 2015 edition; revisions have been made throughout all sections. These revisions are the result of committee evaluation, inquiries, and changing technology and industry needs. ASME NOG-1–2020 received ANSI approval on August 24, 2020.

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(The following is the roster of the Committee at the time of approval of this Standard.)

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Secretary, Standards Committee on Cranes for Nuclear Facilities
The American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016-5990
http://go.asme.org/Inquiry

Proposing Revisions. Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

Interpretations. Upon request, the Standards Committee on Cranes for Nuclear Facilities (CNF) will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of CNF.

Requests for interpretation should preferably be submitted through the online Interpretation Submittal Form. The form is accessible at http://go.asme.org/InterpretationRequest. Upon submittal of the form, the Inquirer will receive an automatic e-mail confirming receipt.

If the Inquirer is unable to use the online form, he/she may mail the request to the Secretary of CNF at the above address. The request for an interpretation should be clear and unambiguous. It is further recommended that the Inquirer submit his/her request in the following format:

Subject:	Cite the applicable paragraph number(s) and the topic of the inquiry in one or two words.
Edition:	Cite the applicable edition of the Standard for which the interpretation is being requested.
Question:	Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. Please provide a condensed and precise question, composed in such a way that a "yes" or "no" reply is acceptable.
Proposed Reply(ies):	Provide a proposed reply(ies) in the form of "Yes" or "No," with explanation as needed. If entering replies to more than one question, please number the questions and replies.
Background Information:	Provide the Committee with any background information that will assist the Committee in understanding the inquiry. The Inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in the format described above may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

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ASME NOG-1–2020
SUMMARY OF CHANGES

Following approval by the ASME Committee on Cranes for Nuclear Facilities and ASME, and after public review, ASME NOG-1–2020 was approved by the American National Standards Institute on August 24, 2020.

ASME NOG-1–2020 includes the following changes identified by a margin note, **(20)**.

Page	*Location*	*Change*
1	1110	Revised
1	Figure 1110-1	Added
3	1150	(1) Definitions of *blisters*, *flaking*, and *scaling* revised
		(2) Definitions of *load block, crosshead*; *load block, trunnion*; *lower block*; *parts (lines)*; *reeving*; *yield point*; *yield strength*; and *yield stress* added
9	1160	Updated
12	2100	(1) Subparagraphs (a) and (c) revised
		(2) Subparagraph (f) added, and subsequent subparagraph redesignated
13	3210	Last sentence of subpara. (c) deleted
19	Figure 4153.3-1	"Trolley rail" revised to "Bridge rail" in two places
19	Figure 4153.3-2	"Trolley rails" revised to "Bridge rails"
20	Figure 4153.3-3	"Trolley rails" revised to "Bridge rails"
20	Figure 4153.3-4	"Trolley rails" revised to "Bridge rails"
21	4153.6	Title and first paragraph revised
22	Table 4153.6-1	Title revised
25	4154.3	Title revised
25	4160	First and last paragraphs revised
26	Figure 4160-1	Right side of figure revised
27	Table 4211-1	Penultimate column head and Note (4) revised
28	Table 4212-1	Uppermost head revised
29	Table 4221-1	Penultimate column head revised
30	Table 4222-1	Uppermost head and Note (1) revised
29	4231	First paragraph revised
30	4251	Paragraphs 4251, 4251.1, 4251.2(b), 4251.2(c), and 4251.4 revised
31	Table 4251.5-1	First column and Note (1) revised
31	4252	Paragraphs 4252.1, 4252.2, and 4252.3 revised
32	Table 4311-1	First two values of penultimate column revised
32	4312	Definition of "σ_y" and last paragraph revised
32	4313	Revised
32	4314	Revised
32	4315	Subparagraph (a) revised

Page	*Location*	*Change*
36	4345	Subparagraph (a) revised
37	4423.3	Revised
37	4423.4	First and last paragraphs revised
37	4424	Last sentence revised
38	4441.6	Revised
38	4442.3	Second paragraph revised
38	4461	First sentence revised
39	4462	First sentence revised
39	4484.1	Revised
42	5165	Revised
42	5166	Revised
43	5321.2	Revised
46	5411.5	Definition of "τ_{all}" revised in subpara. (b)(2)
48	5413.1	Subparagraph (g) revised
60	5429	Revised in its entirety
60	5430	Subparagraph (a)(4) revised
64	5440	Subparagraph (a)(2) revised
68	5452.5	Revised in its entirety
72	5456.1	Subparagraph (a)(2) revised
72	5456.2	Subparagraph (a) revised
72	5456.3	(1) Subparagraphs (a)(1) and (a)(6) revised
		(2) Subparagraph (a)(5) added, and subsequent subparagraph redesignated
84	5481	Subparagraph (a)(3)(-c) revised
85	5531	Revised
86	6100	Subparagraph (e) revised
86	6120	Subparagraph (b) revised
87	6170	Revised in its entirety
88	6221	Subparagraph (b) revised
89	6310	Subparagraph (c) revised
90	6411.6	Subparagraph (e) revised
92	6417.1	Subparagraphs (f)(3) and (g) added
94	6441.1	Subparagraph (e)(2) revised
95	6442.2	Revised
97	6471	Subparagraph (a) revised
97	6472.1	Equation and nomenclature revised
97	6472.2	Nomenclature for "K_a" revised
101	6472.4	Subparagraph (a) revised
105	7100	Subparagraphs (b) and (c) revised
106	7210	Subparagraph (c) revised
116	7422	Revised
117	7521.2	Subparagraph (m) revised
122	I-4251.2	First paragraph revised
122	I-4251.4	Last paragraph revised

Page	*Location*	*Change*
123	Table I-1180-1	General Note revised
124	Table I-1180-2	General Note revised
129	Table II-1	Topic C.(a)(1) and Note (4) revised
130	Table II-2	Topics B(3)-1(e), D(2)-1(a)(2), D(2)-1(a)(3), and D(2)-1(b)(1) revised
133	A-7611	Subparagraph (c) revised
133	A-7612	Subparagraph (c) revised
137	B-4222	Revised
170	NUREG-0554/ASME NOG-1 Conformance Matrix	(1) In para. 2.1, NOG-1 para. 4350, "Comments" revised (2) In para. 2.8, first two entries for "Method or Statement on NOG Conformance" revised (3) In para. 4.1, entry for "Summary of NUREG Guidance" and "Comments" revised

Section 1000
Introduction

1100 GENERAL

Cranes covered under this Standard shall be designed in accordance with the Standard's requirements but not necessarily with its recommendations. The word *shall* is used to denote a requirement, the word *should* is used to denote a recommendation, and the word *may* is used to denote permission, which is neither a requirement nor a recommendation.

(20) **1110 Scope**

This Standard covers electric overhead and gantry multiple girder cranes with top running bridge and trolley used at nuclear facilities and components of cranes at nuclear facilities. The items qualified by this Standard are the bridge wheels up through the crane bridge and trolley. The runway rails and rail clips are qualified with the runway and building structure and shall also meet the requirements of paras. 4160 and 4460 (see Figure 1110-1).

1120 Applications

This Standard applies to the design, manufacture, testing, inspection, shipment, storage, and erection of the cranes covered by this Standard.

1130 Responsibility

The cranes covered by this Standard are classified into three types (see para. 1150, *crane, Type*), depending upon crane location and usage of the crane at a nuclear facility.

The owner shall be responsible for determining and specifying the crane type. The owner shall also be responsible for determining and specifying the environmental conditions of service, performance requirements, type
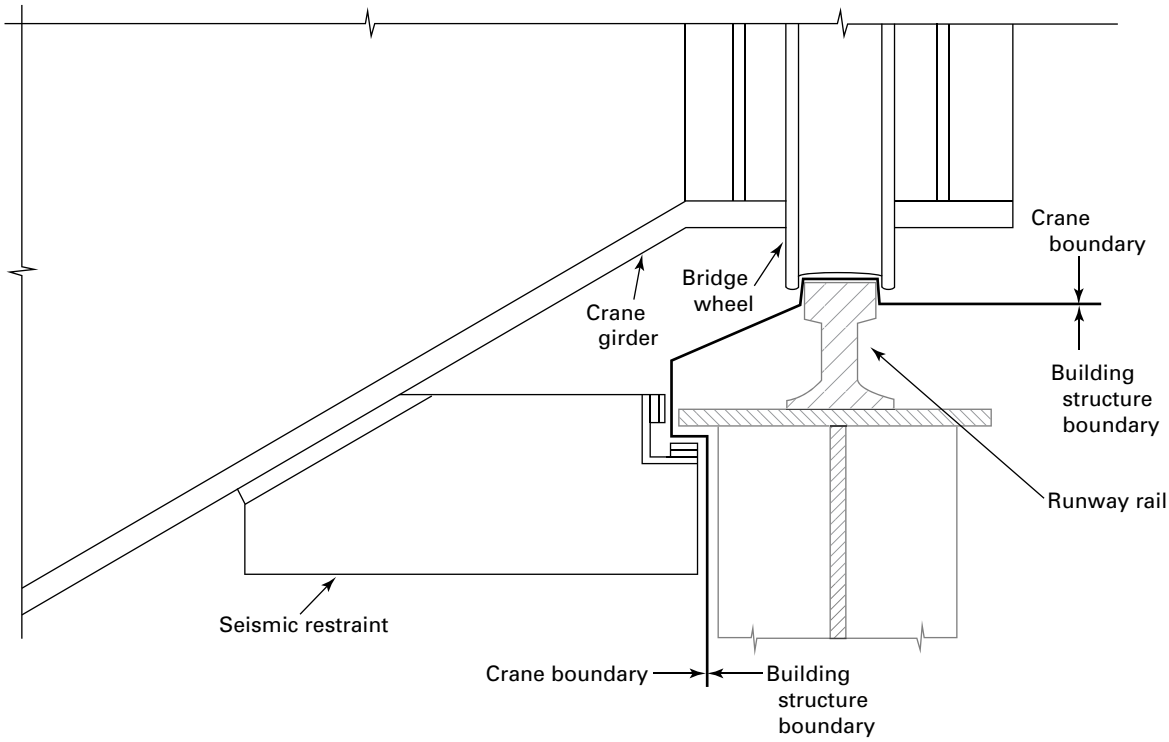
Figure 1110-1 Crane Boundary (20)