

ISO Rules

Part 300 System Reliability and Operations

Division 304 Routine Operations

Section 304.2 Electric Motor Start Requirements



Applicability

- 1 Section 304.2 applies to:
 - (a) the **operator** of an industrial complex that is:
 - (i) in the Empress Area with an electric motor of a size twenty five thousand (25 000) horsepower or larger;
 - (ii) the Shell Limestone industrial complex; or
 - (iii) the Edson Gas Storage industrial complex;
 - (b) the **operator** of the **transmission facility** that operates **bulk transmission line** 854L from the 39S Bickerdike substation to the 397S Benbow substation;
 - (c) the **operator** of the **transmission facility** that operates 348S Marlboro substation; and
 - (d) the **ISO**.

Requirements

ISO Approval Prior to Starting an Electric Motor

2(1) The **operator** of an industrial complex must have the prior verbal approval of the **ISO** by means of direct access telephone to start an electric motor at the industrial complex, in accordance with the specific requirements set out in Appendix 1.

(2) The **operator** of an industrial complex must report to the **ISO** by means of direct access telephone when an attempt to start the electric motor has been completed, whether successful or not.

(3) The **ISO** must notify the **operator** of the **transmission facility** in the regional area of the industrial complex that there has been a request to start up the electric motor, and confirm that the **operator** of the **transmission facility** is not aware of any **reliability** reason to not start the electric motor.

Specific Area Requirements

3(1) Subject to the specific requirements set out in Appendix 1, the **ISO** must grant approval to start the electric motor unless the **ISO** has **reliability** concerns, in addition to those set out in Appendix 1, that would prevent the electric motor start.

(2) The **operator** of an industrial complex and the **operator** of the **transmission facility** must become familiar with the additional specific area requirements set out in Appendix 1.

Appendices

Appendix 1 - *Specific Area Electric Motor Start Approval Requirements*

Revision History

Effective	Description
2012-05-31	Initial release
2014-07-02	Amended subsections 4(1), 4(2) and 5(1) of Appendix 1 by unbolding the references to "outages" and adding the words "or derate" after the word "outages"

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Appendix 1

Specific Area Electric Motor Start Approval Requirements

Empress Area Electric Motor Start

Conditions for Approval

1(1) If the **ISO** receives a request from the **operator** of an industrial complex in the Empress Area, other than the Sand Hills industrial complex, to start an electric motor of a size of twenty five thousand (25 000) horsepower or larger, then the **ISO** must grant approval to start the electric motor unless the **ISO** is aware of any other electric motor start of a size of twenty five thousand (25 000) horsepower or larger already in progress in the Empress Area.

(2) If the **ISO** receives a request from the **operator** of an industrial complex that is the Sand Hills industrial complex to start the fifty four thousand (54 000) horsepower electric motor located at that industrial complex, then the **ISO** must grant approval to start the electric motor, but only if the **ISO** is confident that the following **reliability** conditions are met:

- (a) the **bulk transmission lines** designated as 944L, 945L, 951L, 1001L and 1002L, and the 163S Amoco Empress 240/138 kV transformer must all be in service;
- (b) the 840S McNeill converter station must not be **ramping** in response to a **dispatch**;
- (c) both of the Sheerness **generating units** must be on-line, unless the **ISO** determines that **reliability** conditions will allow for starting the electric motor with one (1) of the **generating units** off-line;
- (d) one (1) capacitor bank at the 163S Amoco Empress 240/138 kV transformer must be in service; and
- (e) the **ISO** must not be aware of any other electric motor start already in progress in the Empress Area.

(3) The **ISO** must verbally inform any applicable **operator** of the **transmission facility** of the status of an approved electric motor start at the Sand Hills industrial complex.

Shell Limestone Electric Motor Start - Prior Notices

2(1) If the **ISO** receives a request from the **operator** of an industrial complex that is the Shell Limestone industrial complex to start the eighteen thousand (18 000) horsepower electric motor located at that industrial complex, then the **operator** must provide the anticipated date and time of the start of the electric motor and make the verbal request to the **ISO** at least one (1) hour prior to that start.

(2) In addition, the **operator** must provide all affected direct connect **market participants**, served from the 581S Amoco Ricinus substation and which the **ISO** indicates, with at least one (1) hour notice by telephone prior to the starting of the electric motor, indicating the expected time of start and that there may be a short dip in their utility voltage due to the electric motor start.

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Shell Limestone - Conditions for Approval

3 If the **operator** has completed all notice requirements under subsection 2(2), then the **ISO** must grant approval to start the Shell Limestone eighteen thousand (18 000) horsepower electric motor, but only if the **ISO** is confident that the following **reliability** conditions are met:

- (a) starting of the electric motor with the variable frequency drive is not possible, and delay in starting the electric motor would lead to significant financial hardship or environmental damage;
- (b) the **transmission system** voltages must be equal to or greater than nominal values at the 304S Shell Limestone substation and 378S Shell Caroline substation;
- (c) the capacitor banks at 263S Strachan substation and 256S Harmattan substation must be available if required;
- (d) the Bighorn **generating unit** output must be greater than zero (0) MW; and
- (e) the **bulk transmission lines** designated as 848L, 717L/870L/719L and 166L must be in service.

Edson Gas Storage Electric Motor Start - Request for Approval

4(1) If the 348S Marlboro substation located in the Hinton/Edson Area experiences an outage or derate resulting in any of the five thousand (5 000) horsepower electric motor-driven compressors at the Edson Gas Storage industrial complex shutting down, then the **operator** of that industrial complex must request approval from the **ISO** before restarting any of the compressor electric motors.

(2) If an outage or derate is in the nature of a permanent fault, then depending on the location of the permanent fault, the **operator** of the **transmission facility** must sectionalize the appropriate section of **bulk transmission line** 854L to allow radial supply to the 348S Marlboro substation from either the 39S Bickerdike substation or the 397S Benbow substation.

Edson Gas Storage - Conditions for Approval

5(1) If the **ISO** receives a request from the **operator** of an industrial complex that is the Edson Gas Storage industrial complex to restart any of the five thousand (5 000) horsepower electric motor-driven compressors at that industrial complex after an outage or derate, then the **ISO** must grant approval to start the electric motor, subject to the **reliability** condition in 5(2).

(2) If the **bulk transmission line** designated as 844L is supplied from only the Benbow 397S substation, then the **operator** of the 348S Marlboro substation must limit the load capacity to a maximum of two (2) electric motor starts with an anticipated voltage flicker level of three point eight eight (3.88) percent.