

EV-TR-2018-006746-1

Background:

Portable scaffolding provided by “SafeTec Platforms” that is also commercially known as “All Stands / X-Deck” assembled portable scaffolding is requested by Maintenance to be evaluated by Engineering for use in CPNPP.

Instructions:

It is acceptable to use Portable scaffolding provided by “SafeTec Platforms” (also commercially known as “All Stands / X-Deck”) in the Plant including inside Seismic Category I Buildings, as illustrated under attached Filename [“All Stands Preassembled Scaffold X-Deck_Info”](#), provided the following requirements are met:

1. As stated in Section 6.1.12 of STA-690 “Erecting and Control of Scaffolding”, the X-Deck scaffold material supplied by the vendor shall be installed in accordance with the vendor Technical Manual or information. Scaffold installation for seismic ruggedness in Seismic Category I Buildings shall, at a minimum, meet the vendor seismic requirements for acceptable installation of their scaffold and any additional requirements provided in this procedure. Towards that end, the following may be performed for acceptable installation inside Seismic Category I Buildings:
 - a. Bracing to building structures inside Seismic Category I Buildings shall, at a minimum, meet or exceed the provisions as stated in Section 6.9 and 6.10 of STA-690 and the configuration as indicated in Figures 7.4, 7.5 and 7.6 of the Procedure, as well as per vendor recommendations.
 - b. Alternatively, the X-Deck can be considered as transient equipment erected or stored in accordance with the Stability Criteria of Section 6.7 & 6.8 of Site Procedure STA-661. If it is determined that tipping (toppling) could occur when erected and in use, then the restraining requirements of Section 6.9 shall be implemented.
 - c. Commodity Clearance requirements of Specification CPES-S-1021 applicable to Scaffold installation as “Rigid Structures” will also apply to this installation (X-Deck), in addition to other provisions as stated in Sections 6.1 (including 6.1.3), 6.2, 6.12 and 6.13 of STA-690. **Note:** Scaffold personnel trained to STA-690 requirements for acceptable scaffold installation are trained to address these requirements during installation.
 - d. Following specific Vendor Instruction should be used if required:
 - i. The associated tie-down turnbuckles that are commercially available and also provided with the X-Deck by the vendor can be used as part of the tie down attachments to plant structures and building steel, consistent with STA-690 as well. [Refer to “**Turnbuckle technical drawing (1 of 2) & (2 of 2)**”]
 - ii. Each X-Deck comes pre-installed with 2 scaffold knuckles that are installed onto the side of the deck of the X-Deck. These knuckles can be moved around the outside of the deck to 8 different locations. They are installed with stainless steel hardware. The scaffold knuckle is from McMaster-Carr part number #[3126T31](#),

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or equivalent, each rated at 1,650 lbs capacity strength on an X-Deck that weighs between 50 and 150 lbs. The scaffold builder would use standard scaffolding to connect their X-Deck to any approved structure.

- iii. Each X-Deck comes with four 2" round scaffold pockets that are built to integrate with standard scaffolding. The scaffold builder can use these to build their own handrails or use the pockets to connect standard scaffolding to their X-Deck. These would be built and inspected by the competent scaffold builder. Both the tie downs and scaffold knuckles should be utilized if required. When both methods are used the X-Deck should be in a stable seismic configuration.
2. Visual inspection, as recommended by the vendor and required by Procedure, should be performed prior to each use, to ensure proper erection and to check for bent or damaged legs, broken welds or springs, loose bolts, or any other damage or wear for this assembled type scaffolding (from repetitive use).
3. Approved-for-use inspection tagging, including that for vendor certified weight limits, debris net installation, and similar requirements in STA-690 shall be in place prior to any use, and in accordance with vendor requirements.
4. The installation should have an evenly distributed and stable configuration of the X-Deck legging system (typically four legs).
5. Fall arrest requirements must be met as stated in STA-690 and applicable site procedures. To that end, vendor provided handrails should be installed in accordance with vendor requirements and inspected prior to each use for breakage or bending.
6. Attachment of personnel fall protection lanyards to these preassembled Decks (including handrails) should be considered only if no other appropriate attachment options are available and should be consistent with vendor requirements, site procedures, and safety department requirements.
7. Any long-term installation should strictly follow the requirements stated in Section 6.14 of STA-690.

Evaluation:

These stands, referred to as the "X-Deck", are composed of pre-assembled scaffolding components ready for erection and installation. This is unlike "traditional" scaffold components (poles, walkboards, etc.) that are typically assembled onsite, disassembled after use, and rebuilt for each subsequent use. Nonetheless, once erected, the pre-assembled components (as described and provided by the vendor) are well-built and extremely durable, with a life expectancy of over 15 years and meeting or exceeding OSHA requirements for personal safety.

Indeed, these scaffolds are an enhancement since the pre-assembled components' unique design allows for even distribution of all deck weight to all legs and feet (typically four). These preassembled scaffold type configurations have been tested for strength as indicated in the attached File "[Certification Testing Reports](#)" (Tests 1 through 4) and also through operating experience in industries similar to the Nuclear Power subjected to stringent requirements and operational dynamic (vibratory)

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conditions such as the US Military (refer to attached filename “**Similar Industry Operating Experience**”).

The number of bolts used has been optimized and they are secured with lock-nuts. The overall configuration cannot tip over once it is locked in place and secured (for seismic considerations) to the ground or building structure in a manner consistent with STA-690 and vendor instructions.

Furthermore, there is no industry operating experience (over a period of the last 12 years) that has been identified or provided to the vendor that indicated an adverse condition resulting from the use of this design.

There are no Seismic II/I concerns from this application giving the stipulations identified under “Instructions” section above. These are required to be implemented when the “X-Deck” are utilized in side Seismic category I buildings.

The use of Portable scaffolding provided by “SafeTec Platforms” (also commercially known as “All Stands / X-Deck”) in the Plant, including inside Seismic Category I Buildings, will be included in the next revision to STA-690. **AI-TR-2018-006746-2** has been initiated to track this activity to include the requirements of this EV-1, to be implemented when the “X-Deck” pre-assembled scaffolding components and structures are utilized in the Plant.