

SAUDI ARABIAN OIL COMPANY (Saudi Aramco) GENERAL INSTRUCTION MANUAL ISSUING ORG. LOSS PREVENTION DEPARTMENT SUBJECT: SAFETY REQUIREMENTS FOR SCAFFOLDS	G.I.NUMBER Approved 8.001	
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1.0 PURPOSE

- ★ This General Instruction (GI) provides minimum administrative requirements for the safe design, erection, supervision, inspection, use, alteration, and dismantling of stationary and mobile scaffolds with fixed platform heights used for personnel access at all onshore and offshore Saudi Aramco facilities and project sites. This GI applies to scaffolds erected either by contractors or by Saudi Aramco departments in support of construction, operations, or maintenance activities.

2.0 DEFINITIONS & ACRONYMS

- 2.1 **Bracket (Tank Builder's) Scaffold** – a scaffold supported by bracket straps welded to the tank or vessel wall. Upright brackets are hooked to the straps.
- 2.2 **Fabricated Tubular Frame Scaffold** – a scaffold consisting of a platform(s) supported on fabricated end frames with integral posts.
- ★★2.3 **Formwork** – the total system of support for freshly poured or partially cured concrete, including the mold or sheeting (form) that is in contact with the concrete, as well as all supporting members, braces, and related hardware.
- ★★2.4 **Formwork Shoring** – temporary vertical supporting members in a formwork system that are designed to carry the weight of the formwork, concrete, and construction loads.
- ★ 2.5 **Guardrail System** – consisting of top-rails, mid-rails, and support uprights installed on all open sides and ends of scaffold platform and also opening in the platform to prevent workers from falling off.

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2.6 **Lanyard** – a flexible line with a positive means to lock end connections closed (i.e., locking type snap hooks or carabineers with a self-closing, self-locking keeper) that is used to secure the wearer of a full body harness to a lifeline or a point of anchorage.

- **Shock-absorbing Lanyard** - a specially designed lanyard with a built-in shock absorber that elongates during a fall, so that fall arresting forces are significantly reduced when compared to a traditional web or rope lanyard.

2.7 **Mobile Scaffold** – a rigid scaffold assembly supported by casters and manually moved horizontally.

2.8 **Personal Fall Arrest System** – a system used to arrest an individual's fall. It consists of a substantial anchorage, full body harness, and lanyard, and may include a deceleration device, lifeline, or suitable combinations of these.

2.9 **Platform Unit** – an individual wood plank, fabricated plank, fabricated deck, or fabricated platform.

2.10 **Point of access** – the stepping-on point for all ladders, stairs, etc. used to gain initial access to a scaffold. Upper ladders within a scaffold are not considered a point of access.

2.11 **Proponent** – any Saudi Aramco organization (or its authorized representative) that has been assigned to occupy and/or operate in any community or plant (industrial and non-industrial) facility or building. For capital projects under construction within an existing facility, the Proponent shall be the owner of that facility. For grassroots capital projects under construction, the Proponent shall be the organization responsible for executing the project.

★ 2.12 **Degreed Structural Engineer** – a person with a civil or structural engineering degree, from an internationally recognized four (4) year university, who has demonstrated experience in scaffolding design and construction.

★ 2.13 **Scaffold** – a temporary structure (base-supported or underhung) used to provide access or for supporting workmen and/or materials at any height.

2.14 **Scaffold Craftsmen (Scaffolders)** – employees of the Scaffold Erector who work under the direct supervision of a Scaffold Supervisor and who erect, alter, or dismantle scaffolds. Scaffold craftsmen shall be trained and qualified to perform scaffolding work, but are *not* certified by Saudi Aramco.

2.15 **Scaffold Erector** – the organization responsible for the proper design, erection, alteration, and dismantling of the scaffold. May be either a Saudi Aramco maintenance organization or an outside contractor.

2.16 **Scaffold Field Inspection Checklists** – checklists with minimum requirements for field inspection of various types of scaffolds (see the Loss Prevention Department Intranet website). The various Scaffold Field Inspection Checklists and their applicability are:

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- “Base-Supported, Non-Movable Scaffold Field Inspection Checklist” (Saudi Aramco Form 9614). To be used for field inspection of fixed scaffolds supported at their base.
- “Mobile Scaffold Field Inspection Checklist” (Saudi Aramco Form 9615). To be used for field inspection of mobile scaffolds.
- “Underhung Scaffold Field Inspection Checklist” (Saudi Aramco Form 9616). To be used for field inspection of underhung (suspended) scaffolds.
- “Bracket Scaffold Field Inspection Checklist” (Saudi Aramco Form 9617). To be used for field inspection of bracket (tank builder’s) scaffolds.
- “Scaffold Field Inspection Checklist” in the *Saudi Aramco Blue Book* (shall be provided by the Scaffold Erector and may be used in lieu of the above checklists by Scaffold Supervisors and Inspectors who are *certified* by Saudi Aramco).

2.17 **Scaffold Inspector** – a Saudi Aramco or contractor employee who has the training, experience, and capability of performing scaffold inspection tasks by identifying scaffold hazards, verifying compliance with applicable standards, and recording inspection results. All Scaffold Inspectors shall be certified by Saudi Aramco (see section 11.0).

2.18 **Scaffold Plan** – a scaffold design/layout package sufficient to erect a complete scaffold. A scaffold plan submitted for review by Saudi Aramco shall include drawings, design loads, scaffold material specifications and sizes, manufacturer’s technical data for couplers and fittings, etc. (including structural calculations required for special scaffolds or when requested for other scaffolds).

★2.19 **Scaffold Plan Completeness Checklist** – a checklist (Saudi Aramco Form 9613) for verifying completeness of information shown on a scaffold plan (see attached Supplement 8.001-3, or the Loss Prevention Department Intranet website).

2.20 **Scaffold Supervisor** – a full-time employee of the Scaffold Erector who is the immediate supervisor of craftsmen erecting, altering, or dismantling scaffolds in the area for which he is responsible, and who has the authority, training, and experience necessary to competently direct scaffolding work and verify compliance with applicable standards. All Scaffold Supervisors shall be certified by Saudi Aramco (see section 11.0).

★2.21 **Scaffold Tag** – a standard Saudi Aramco holder with inserts (restricted only for use on Saudi Aramco facilities and project sites) for clearly showing whether or not a scaffold meets Saudi Aramco’s requirements. The Scaffold Erector shall purchase, provide, and use only authentic Saudi Aramco-approved scaffold tags obtained from a Saudi Aramco authorized supplier, unless it is explicitly stated in the contract that scaffold tags will be provided by the proponent. Scaffold tags are color coded as follows:

- **Red Scaffold Tag** – indicates that the scaffold has not been inspected or is *not* safe for use (by anyone other than scaffold craftsmen). The red scaffold tag is also a holder into which either green or yellow scaffold tag inserts are to be placed, as applicable. Only authentic Saudi Aramco approved red scaffold tag holders (SAP Material Number 1000123277) are to be used as red scaffold tags.

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★ • **Green Scaffold Tag** – indicates that the scaffold is complete, has been inspected, and is safe for use at the time of inspection. A green scaffold tag is valid for a maximum of two weeks, but can be renewed three (3) additional times for a total of eight (8) weeks. Only authentic Saudi Aramco approved green scaffold tag inserts (SAP Material Number 1000123290) are to be used as green scaffold tags.

★ • **Yellow Scaffold Tag** – indicates the scaffold has been inspected and may be used *only* by workers wearing a properly anchored personal fall arrest system, including full body harness and lanyard. A yellow scaffold tag is required whenever all guardrails or planks cannot physically be installed (e.g., due to interferences) or must be temporarily removed. A yellow scaffold tag does not permit intentional erection of an incomplete scaffold. A yellow scaffold tag is valid for a maximum of two weeks, but can be renewed three (3) additional times for a total of eight (8) weeks. Only authentic Saudi Aramco approved yellow scaffold tag inserts (SAP Material Number 1000123293) are to be used as yellow scaffold tags.

2.22 **Scaffold User's Safety Checklist** – a checklist to assist users of a scaffold and Work Permit Issuers/Receivers in performing a pre-use safety inspection. This checklist is on the reverse side of the green and yellow scaffold tags.

★2.23 **Special Scaffold** – a scaffold that meets any of the following conditions and for which a structural engineering review of the scaffold plan by the Saudi Aramco Consulting Services Department (CSD) is required:

- Any scaffold over 38 meters (125 feet) tall, or
- ★ • A tube and coupler scaffold which exceeds the maximum limits in Chapter II-2, "Scaffolding," of the Saudi Aramco *Construction Safety Manual*, or
- Any scaffold cantilevered (extended outward) by more than 3 meters (10 feet), or
- Any scaffold (except tank bracket scaffolds) with a total platform area over 30 square meters (320 sq. ft.) that is supported by or hung from an existing structure (e.g., building, roof, pipe rack, offshore platform) or is within 3 meters (10 feet) of any other scaffold supported by or hung from the same structure, or
- ★ • Any access scaffold also supporting loads greater than 240 kg/m² (50 psf), including piping, equipment, masonry, new or existing structures, or loads other than workers and their materials, or
- ★★ • Formwork shoring constructed of scaffolding materials supporting elevated concrete slabs/decks more than 300 mm (12 inches) thick, or
- Any scaffold supported by or hung from wind girders or roofs of floating roof tanks.

2.24 **Specialized Scaffolding Contractor** – a contractor Scaffold Erector (organization) that specializes in and regularly performs all phases of scaffold design and erection. For the purposes of this GI, a Specialized Scaffolding Contractor may be either an independent scaffolding company or the scaffold division/unit of a local company and shall be approved by Saudi Aramco. Scaffold design and erection shall be the sole business of a Specialized Scaffolding Contractor (company or division/unit). Contractors currently on the Saudi Aramco General Bid Slate (GBS) for Scaffolding Services are approved Specialized Scaffolding Contractors. Other contractors (Non-GBS) interested

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in being considered for approval as a Specialized Scaffolding Contractor shall submit their completed Non-GBS Qualification Questionnaire (available on the Loss Prevention Department Intranet website) *through their Proponent* to the Manager, Loss Prevention Department, for review by the Specialized Scaffolding Contractor Evaluation Team (SSCET). This review takes at least 3 months.

- 2.25 **Structural Alteration** – any change in the framing configuration of the structural elements (used to carry load or for stability) of an existing scaffold.
- 2.26 **System Scaffold** – a scaffold consisting of posts (standards) with fixed connection points that accept runners (ledgers), bearers (transoms) and braces that can be interconnected at predetermined levels.
- 2.27 **Tube and Coupler Scaffold** – a scaffold constructed of: steel tubing that serves as posts (standards), runners (ledgers), bearers (transoms), braces, and ties; a base supporting the posts; and specially designed scaffold couplers that serve to connect the various members.
- 2.28 **ACRONYMS**
- ALPD Area Loss Prevention Division
 - CSD Consulting Services Department
 - CSM Construction Safety Manual
 - GBS General Bid Slate for Scaffolding Services
 - GES General Engineering Services (design consultant)
 - LPD Loss Prevention Department
 - PMT Project Management Team
 - PPE Personal Protective Equipment
 - SSCET Specialized Scaffolding Contractor Evaluation Team
 - ★ T&D Training & Development

3.0 GENERAL PROVISIONS

- ★3.1 All scaffold work shall meet the requirements of this General Instruction and the Saudi Aramco *Construction Safety Manual* (CSM), Chapter II-2, “Scaffolding”, and Chapter II-5, “Fall Protection.” Formwork and formwork shoring constructed of scaffolding materials shall be per Chapter II-6, “Concrete Construction,” of the CSM, unless it’s categorized as a “special scaffold” per paragraph 2.23 herein.
- 3.2 All scaffolds shall be built in accordance with the work process/decision flowchart in Supplement 8.001-1, including formal scaffold plan review, inspection, tagging, etc. However, base-supported scaffolds less than 1.8 meters (6 feet) tall do not need to be in accordance with Supplement 8.001-1, unless located near the edge of an elevated structure with a protected or un-protected fall potential of more than 1.8 meters (6 feet).
- 3.3 Special scaffolds and scaffolds over 12.2 meters (40 feet) tall shall only be designed, erected, altered, inspected, and dismantled by a Saudi Aramco approved Specialized Scaffolding Contractor.

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However, Saudi Aramco maintenance organizations that specialize in offshore work are permitted to design, erect, alter, and dismantle scaffolds over 12.2 meters (40 feet) tall and special scaffolds on remote offshore platforms for their own use only.

- 3.4 If an approved Specialized Scaffolding Contractor is *not* on the General Bid Slate for Scaffolding Services (Non-GBS), they are only permitted (within Saudi Aramco) to design, erect, and alter scaffolds *for their own use* (not for hire), using their own personnel and materials.
- 3.5 For scaffolds equal to or less than 12.2 meters (40 feet) tall, the Proponent shall decide whether to use a Saudi Aramco maintenance group or an outside contractor, giving due consideration to their in-house capabilities and the complexity of the required scaffold(s).

4.0 SCAFFOLD PLAN PREPARATION AND REVIEW

- ★4.1 A scaffold plan, which meets all Saudi Aramco requirements (e.g., Chapter II-2 of the CSM), shall be prepared by the Specialized Scaffolding Contractor for all scaffolds over 12.2 meters (40 feet) in height, for all special scaffolds, or for any other scaffold as requested by the Loss Prevention Department.
- 4.2 The Specialized Scaffolding Contractor shall ensure that every scaffold plan is complete and in accordance with the “Scaffold Plan Completeness Checklist.” The Specialized Scaffolding Contractor shall complete and attach this checklist to every scaffold plan, prior to submitting the scaffold plan to the Proponent for review.
- 4.3 The Specialized Scaffolding Contractor shall ensure that the scaffold plan for any special scaffold is checked and the design verified and signed by a degreed structural engineer, prior to submitting the scaffold plan to the Proponent for review. For scaffolds requiring a scaffold plan and supported by an existing structure, the degreed structural engineer shall compute or verify scaffold support reactions (including wind). These support reactions shall be submitted to the Proponent for use in confirming the adequacy of the existing structure to support the scaffold loads.
- ★4.4 The Specialized Scaffolding Contractor shall utilize an independent Saudi Aramco approved General Engineering Services (GES) design consultant, or the structural engineering group of the project’s Lump Sum Turnkey (LSTK) contractor, to prepare or review and approve the structural calculations and scaffold plan for any scaffold categorized as a special scaffold. This engineering shall be performed by degreed structural engineer(s) prior to submittal of the scaffold plan to Saudi Aramco for approval and shall be in accordance with the latest structural design criteria referenced in Chapter II-2, “Scaffolding,” of the CSM.
- 4.5 The Proponent shall review every scaffold plan for completeness and verify that the scaffold meets job functionality, access, and clearance requirements, prior to submitting the scaffold plan for review by the Loss Prevention Department (LPD). For scaffolds requiring a scaffold plan and supported by an existing structure, the Proponent’s designated engineering organization is responsible for confirming the adequacy of the existing structure to support the scaffold loads (including wind loads) and for ensuring that all necessary precautions (e.g., shoring) are taken, prior to submitting the plan for review by LPD.

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- 4.6 The Proponent shall submit the scaffold plan (if required per paragraph 4.1) to the local Area Loss Prevention Division (ALPD) office for review at least two weeks prior to erection (four weeks for special scaffolds). This lead time is necessary to allow adequate time for scaffold plan transit, review, rework, and acceptance.
- ★4.7 The ALPD shall review scaffold plans for scaffolds over 12.2 meters (40 feet), all special scaffolds and as requested by the proponent organizations. ALPD shall review scaffold plans for conformance to Saudi Aramco's requirements (e.g., Chapter II-2 of the CSM). If all needed information accompanies the scaffold plan (per "Scaffold Plan Completeness Checklist") and no rework is required, review and acceptance will be completed within one week after receipt of the scaffold plan. If rework is required, ALPD shall work with the Proponent to ensure that the Specialized Scaffolding Contractor satisfactorily corrects noted deficiencies. A copy of the revised scaffold plan shall be sent to the same ALPD office for verification that their comments were satisfactorily addressed.
- 4.8 For special scaffolds, the Proponent shall submit another scaffold plan (after ALPD review and rework) to Consulting Services Department (CSD) Civil Engineering Unit. CSD shall perform a structural engineering review of the scaffold plan for special scaffolds. However, CSD will not review, and will return for rework, any scaffold plan that is incomplete and/or not legibly prepared in accordance with the "Scaffold Plan Completeness Checklist." If all needed information accompanies the scaffold plan and no rework is required, review and acceptance will be completed within two weeks after receipt of the scaffold plan. If rework is required, CSD shall work with the Proponent to ensure that the Specialized Scaffolding Contractor satisfactorily corrects noted deficiencies. A copy of the revised scaffold plan shall be sent to CSD for verification that their comments were satisfactorily addressed.
- 4.9 A copy of the final, accepted scaffold plan shall be sent by the Proponent to the ALPD.
- 4.10 The Proponent should file the final, accepted scaffold plan for use as a model scaffold plan for similar jobs in the future.

5.0 SCAFFOLD ERECTION

- 5.1 Prior to scaffold erection, the Proponent representative (e.g., Work Permit Issuer) and Scaffold Supervisor shall survey the job site and take measures to mitigate potential hazards, such as: debris, overhead power lines, electrical cables, excavations, roads, etc. For scaffolds requiring a scaffold plan, the Work Permit Issuer shall verify that a scaffold plan was prepared (and reviewed by ALPD) before issuing a Work Permit for scaffold erection.
- 5.2 Scaffold materials shall be inspected before, during, and after erection by the Scaffold Supervisor to ensure that they meet all Saudi Aramco requirements, are in good condition, and are free of defects. Any scaffold component that is damaged, weakened, or does not meet the applicable codes and standards shall be marked with bright fluorescent orange paint and immediately removed from Saudi Aramco property. This material shall be destroyed to ensure that it is not reused on any Saudi Aramco facility or project site.

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- 5.3 Any scaffold for which a scaffold plan was prepared shall be erected in accordance with the final, accepted scaffold plan for that scaffold. Any required deviations from the accepted scaffold plan shall be first reviewed by the ALPD and, in the case of a special scaffold, by CSD.
- 5.4 All scaffolds shall be erected, altered, and dismantled only under the direction of an on-site Scaffold Supervisor employed by the Scaffold Erector. The Scaffold Supervisor shall have full supervisory authority over his scaffold craftsmen, be present at the job site during their work, and provide effective supervision of all scaffolding work under his responsibility. He shall not just show up at the end of the job to sign the scaffold tag. Only trained and experienced scaffold craftsmen shall be used for erecting, altering, and dismantling scaffolds.
- ★5.5 The Scaffold Supervisor shall ensure that Personal Protective Equipment (PPE), including personal fall arrest systems, is used by his scaffold craftsmen in accordance with Saudi Aramco requirements (e.g., Chapter II-5 of the CSM) during scaffold erection, alteration, and dismantling. Each scaffold craftsman shall continuously wear a full body harness with a shock-absorbing lanyard while erecting, altering, or dismantling a scaffold. If it is possible to do so, each scaffold craftsman shall properly anchor his lanyard whenever he is not protected by a guardrail system and could fall more than 1.8 meters (6 feet). The lanyard shall be anchored to the scaffold only if a stronger anchorage is not available.
- 5.6 All scaffolds shall be continuously tagged with a Saudi Aramco red, green, or yellow scaffold tag, as applicable. During the entire time that a scaffold is being erected, altered, repaired, or dismantled, a red ("Do Not Use") scaffold tag shall be continuously attached to the scaffold at each point of access. Only the Scaffold Supervisor or Scaffold Inspector is authorized to remove a red scaffold tag. Red scaffold tags (empty holders) shall be attached to the scaffold by placing a scaffold tube through the hole in the holder during scaffold erection. Red scaffold tags (empty holders) shall not be tied to the scaffold using wire, string, etc.

6.0 INITIAL INSPECTION AND TAGGING

- 6.1 Any scaffold tagged with a red scaffold tag shall not be used, except by scaffold craftsmen for the purpose of erecting, dismantling, altering, or correcting scaffold deficiencies. Any unauthorized person using a scaffold with a red scaffold tag, and their supervision, will be subject to disciplinary action.
- 6.2 The Scaffold Supervisor who is responsible for the scaffold shall personally inspect the scaffold at the job site as soon as possible after completion by his craftsmen, and before workers other than scaffold craftsmen may use the scaffold. The Scaffold Supervisor shall complete and sign the applicable "Scaffold Field Inspection Checklist" during this field inspection.
- 6.3 All green ("Passed Inspection") or yellow ("Full Body Harness Required") scaffold tags shall be signed by a certified Scaffold Supervisor. He shall sign in the "Scaffold Supervisor" section (not the "Scaffold Inspector" section) of the scaffold tag(s) immediately after he inspects the scaffold and determines that it is complete and safe for use in accordance with Saudi Aramco requirements. For a scaffold equal to or less than 6 meters (20 feet) tall, which is not a special scaffold, only the

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certified 6.4 Scaffold Supervisor is required to sign the scaffold tag(s) and he shall write the "Date of Next Inspection" on the tag(s). The next inspection date shall *not* be more than two weeks after the date when he completed his present inspection. For a scaffold equal to or less than 6 meters (20 feet) tall that is not a special scaffold, the Supervisor shall insert his signed green or yellow tag into the previously installed holder. However, for scaffolds over 6 meters (20 feet) tall and special scaffolds, the Supervisor shall give his signed tag(s) to a certified Scaffold Inspector.

- 6.4 Scaffolds over 6 meters (20 feet) tall and special scaffolds shall *also* be inspected by a certified Scaffold Inspector (who is not the Supervisor for that scaffold). The Inspector shall personally complete his inspection at the job site as soon as possible *after* the Scaffold Supervisor completes his inspection. Both the Scaffold Supervisor and Inspector shall complete and sign separate "Scaffold Field Inspection Checklists." After the Inspector determines that the scaffold is complete and safe for use in accordance with Saudi Aramco requirements, he shall also sign the same green or yellow scaffold tag(s) that were previously signed by the Scaffold Supervisor. The Inspector shall only sign scaffold tag(s) in the "Scaffold Inspector" section (not in the "Scaffold Supervisor" section). The Inspector shall write the "Date of Next Inspection" on the green or yellow scaffold tag(s). The next inspection date shall *not* be more than two weeks after the date when he completed his present inspection. For scaffolds over 6 meters (20 feet) tall and special scaffolds, the Inspector shall insert the green or yellow scaffold tag, signed by *both* himself and the Scaffold Supervisor, into the previously installed holder.
- 6.5 After each field inspection, the Scaffold Supervisor (and Inspector, if required per paragraph 6.4) shall give his signed "Scaffold Field Inspection Checklist" to either the Work Permit Issuer's unit or the Saudi Aramco project site office (as applicable), who will keep it on file until the scaffold has been dismantled.
- 6.6 *Both* the Scaffold Supervisor and the Scaffold Inspector shall each have completed their inspection and signed the appropriate scaffold tag(s) before any scaffold over 6 meters (20 feet) tall, or any special scaffold, may be tagged with anything other than red scaffold tag(s), or used by anyone other than scaffold craftsmen.
- 6.7 For any scaffold with platform(s) which physically cannot be completely erected (e.g., interference with equipment or structure prevents installation of all guardrails or planks), yellow scaffold tag(s) (instead of green scaffold tags) shall be signed by the Scaffold Supervisor (and Inspector if required per paragraph 6.4) and securely affixed to the scaffold, in a clearly visible location at each point of access. In no case shall a scaffold that is missing members required for structural stability (e.g., bearers, runners, posts, or braces) be tagged with yellow or green scaffold tag(s). Use of a yellow scaffold tag does not permit intentional erection of incomplete scaffolds.
- 6.8 Only the Scaffold Supervisor (and Inspector, if required per paragraph 6.4) is authorized to sign or affix green or yellow scaffold tag(s). The Scaffold Supervisor (and Inspector) shall not sign scaffold tag(s) for any scaffold he considers to be unsafe or incorrect. The Scaffold Supervisor (and Inspector) are not accountable if others alter, without their knowledge, a scaffold with a scaffold tag they previously signed.

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★6.9 Each green or yellow scaffold tag (insert) shall be securely and completely inserted into the red scaffold tag (holder) such that it hides the red “Do Not Use” warning message. The front face of the green or yellow scaffold tags (with signatures) shall be clearly visible at all times and the “Scaffold ID Number” handwritten on the green or yellow insert shall match the ID number printed on the scaffold tag holder. Only permanent ink pens (e.g., Saudi Aramco SAP Material #1000123296) are to be used to write on and sign green and yellow scaffold tags. All green and yellow scaffold tags shall have a maximum validity of two weeks, but can be renewed three (3) additional times for a total of eight (8) weeks.

6.10 Scaffold tags shall not be removed and used elsewhere prior to dismantling the scaffold to which they are attached.

6.11 Green and yellow scaffold tags shall not be reused (e.g., do not erase or “white out” previous signatures, inspection dates, etc.).

7.0 ALTERATIONS

7.1 Only scaffold craftsmen, under the direct supervision of a Scaffold Supervisor employed by the Scaffold Erector who originally erected the scaffold, are permitted to alter or repair any part of an existing scaffold, including guardrails, planks, and ladders.

7.2 The altered scaffold shall be re-inspected by a Scaffold Supervisor (and Scaffold Inspector, if required per paragraph 6.4) after each alteration. If the scaffold is safe for use, newly signed green or yellow scaffold tags (as applicable) shall be securely attached to the scaffold prior to reuse.

7.3 Neither the Scaffold Supervisor, nor any other employee of the Scaffold Erector, is authorized to make any scaffold alteration which in their opinion is unsafe.

8.0 PERIODIC INSPECTIONS

8.1 At least every two weeks, each scaffold shall be re-inspected by a Scaffold Supervisor employed by the Scaffold Erector who erected the scaffold (and a Scaffold Inspector, if required per paragraph 6.4). This bi-weekly inspection is to determine if the scaffold has been improperly altered and is still safe for use. The Scaffold Supervisor (and Scaffold Inspector, if required per paragraph 6.4) shall sign and attach green or yellow scaffold tag(s), valid for not more than two weeks, to the scaffold if it is still safe for use. If a scaffold has been improperly altered or is unsafe, the Scaffold Supervisor shall ensure it is tagged with a red scaffold tag. Alternatively, he may immediately correct the deficiencies and sign and attach another green or yellow scaffold tag(s) – as applicable.

8.2 Prior to the first use on each shift, the immediate supervisor of the workers who will be using the scaffold (usually the Work Permit Receiver), and the Work Permit Issuer (or his designated representative if a joint site inspection is required per GI 2.100, “Work Permit System”), shall perform a pre-use inspection of the scaffold. This pre-use inspection is to ensure that the scaffold has not been improperly altered, that no major safety defects are present, and that green or yellow scaffold tag(s) are in place and still valid (date of next inspection has not passed). The “Scaffold User’s Safety Checklist,” on the reverse side of the green or yellow scaffold tag, should be used to

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assist in this pre-use inspection.

8.3 If at any time (such as during the pre-use inspection) it is determined that a scaffold is unsafe or that the green or yellow scaffold tags are no longer valid (date of next inspection has passed), the green or yellow scaffold tag(s) shall be removed and the scaffold tagged with red ("Do Not Use") scaffold tag(s). Whenever this is done, the person who removed the green or yellow scaffold tag(s) shall immediately notify the Proponent and/or Work Permit Issuer so that the Work Permit may be promptly withdrawn and corrective action initiated. All work requiring use of the scaffold shall stop until corrective action is taken.

8.4 The Work Permit Issuer shall not issue a Work Permit for anyone (other than scaffold craftsmen) to work on any scaffold that: (1) is determined to be unsafe during the pre-use inspection, (2) does not have a green or yellow scaffold tag, (3) has a red scaffold tag, or (4) has a green or yellow scaffold tag for which the date of next inspection has passed (in this case the green or yellow tag shall be removed). If the scaffold has a valid yellow scaffold tag, the Work Permit Issuer shall note on the Work Permit that use of a personal fall arrest system, including properly anchored full body harness, is required at all times by anyone working on the scaffold.

9.0 DISMANTLING

9.1 Immediately after completion of the scaffold's intended use, and upon verification that no other workers need to use the scaffold, the Proponent shall ensure that all green or yellow scaffold tags are removed from the scaffold and that a red ("Do Not Use") scaffold tag is securely affixed at each point of access. The Proponent shall immediately notify the Scaffold Erector that the scaffold is ready to be dismantled.

9.2 The Scaffold Erector shall dismantle the scaffold as soon as possible after being notified by the Proponent that the scaffold is ready to be dismantled.

9.3 The Scaffold Supervisor shall ensure that dismantling of scaffolds is planned, orderly, and performed level by level from top to bottom. Scaffold components, tools, and fittings shall be lowered to the ground in an orderly manner by rope, etc. and not thrown down. The Scaffold Supervisor shall also ensure that scaffold materials are returned and properly stacked at their designated storage location immediately after the scaffold is dismantled.

10.0 RESPONSIBILITIES

10.1 Consulting Services Department (CSD) – responsible for conducting structural engineering reviews of scaffold plans, including design calculations, for all special scaffolds. Such reviews do not relieve the Specialized Scaffolding Contractor of responsibility for ensuring the structural integrity and adequacy of a scaffold. CSD will also provide a representative to the Specialized Scaffolding Contractor Evaluation Team (SSCET).

★10.2 Training and Development (T&D) – responsible for providing scaffold training courses for Saudi Aramco employees. T&D is also responsible for administering Saudi Aramco Certified Scaffold Supervisor and Certified Scaffold Inspector certification tests and issuing certification cards to

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Saudi Aramco employees and contractor employees who pass the test.

- ★10.3 Loss Prevention Department (LPD) – through its area offices, conducts reviews of scaffold plans for completeness and for conformance to Saudi Aramco’s safety requirements. Such reviews do not relieve the Specialized Scaffolding Contractor of the responsibility for ensuring that scaffold plans are complete and in conformance with Saudi Aramco’s requirements. LPD also conducts random field compliance reviews of scaffolds.

10.4 Proponent responsibilities include:

- 10.4.1 Ensuring that all requirements in this General Instruction are strictly followed, including notifying the Scaffold Erector when the scaffold is ready to be dismantled and ensuring that it is tagged with red scaffold tag(s) after it is no longer needed.
- 10.4.2 Establishing a work process for storing and issuing scaffold tag holders, inserts, and pens to Scaffold Erectors.
- 10.4.3 Communicating in writing to Work Permit Issuers, and to the Scaffold Erector, the names and badge numbers of individuals who are authorized to give direction for scaffold alteration or modification. All directions given to the Scaffold Erector for any scaffold alteration or modification shall state clearly what work access is required, and not specifically how the scaffold is to be altered or modified.
- 10.4.4 Confirming the structural adequacy of any existing structure used to support a scaffold and its intended load, and ensuring that all necessary precautions (e.g., shoring) are taken.
- 10.4.5 For special scaffolds and scaffolds over 12.2 meters (40 feet) tall:
- 10.4.5.1 Designating a single-point-of-contact for all communications during scaffold design, plan review, erection, and inspection.
- 10.4.5.2 Ensuring that the Specialized Scaffolding Contractor has all required layout and design information needed to prepare a complete and correct scaffold plan.
- This information includes:
- type and duration of work to be done on the scaffold,
 - maximum number of workers and additional loads to be on each platform level at any one time,
 - required access points/elevations,
 - maximum number of simultaneous working and planked platforms,
 - location of potential interferences (e.g., piping, equipment) and areas to remain free of obstruction (e.g., exits, roadways),
 - unusual or heavy loads, etc.
- 10.4.5.3 Checking and verifying that the scaffold plan is complete (using the “Scaffold Plan Completeness Checklist”) prior to submitting for review to LPD, and in the case of special scaffolds, to LPD followed by CSD.
- 10.4.5.4 Checking and verifying that the scaffold plan meets job functionality, access, and clearance requirements.
- 10.4.5.5 A Proponent that submits a request for approval of a Specialized Scaffolding Contractor shall assign a representative to the SSCET. This Proponent representative will only participate in the SSCET review of the completed

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Qualification Questionnaire for that specific contractor.

- 10.5 Scaffold Erector (including Specialized Scaffolding Contractor) – responsible for providing qualified and properly trained scaffold craftsmen and supervision to perform all phases of scaffold work, including planning, design, engineering, erection, alteration, dismantling, supervision, and inspection. The Scaffold Erector is responsible for implementing a system to manage and perform bi-weekly inspections of their scaffolds. The Scaffold Erector is responsible for the safety and structural adequacy of scaffolds erected or altered by their employees.
- ★10.6 Scaffold Inspector – responsible for independently verifying scaffold safety and conformance to the requirements of this General Instruction, the Saudi Aramco *Construction Safety Manual* and the accepted scaffold plan, by field inspection, acceptance and co-signing scaffold tag(s) for all new or altered special scaffolds and scaffolds over 6 meters (20 feet) tall. All Scaffold Inspectors shall be fluent in written and verbal English.
- ★10.7 Scaffold Supervisor – responsible for ensuring that scaffold erection, alteration, and dismantling is done safely, in accordance with the accepted scaffold plan, the requirements of this General Instruction and the Saudi Aramco *Construction Safety Manual*. The Scaffold Supervisor is responsible for inspecting the completed scaffold and for appropriate use and placement of scaffold tag(s) on all new or altered scaffolds. All Scaffold Supervisors shall be experienced in scaffold erection and fluent in written and verbal English.

11.0 CERTIFICATION

- 11.1 Only Scaffold Supervisors holding a valid Saudi Aramco Certified Scaffold Supervisor I, Certified Scaffold Supervisor II-T, or Certified Scaffold Supervisor II-S pocket card are permitted to supervise erection, alteration, and dismantling of scaffolds at Saudi Aramco facilities and project sites.
- 11.2 Only Scaffold Inspectors holding a valid Saudi Aramco Certified Scaffold Inspector pocket card are permitted to inspect scaffolds, including special scaffolds, at Saudi Aramco facilities and project sites. Anyone certified as only a Scaffold Inspector is NOT permitted to supervise erection, alteration, and dismantling of scaffolds at Saudi Aramco facilities and project sites.
- 11.3 The supervision and inspection authority of each certification is as follows:
- **Certified Scaffold Supervisor I** – can supervise, inspect, and sign scaffold tags for *all* scaffolds, including special scaffolds. At least five (5) years of scaffold erection experience is required before seeking certification as a Certified Scaffold Supervisor I.
 - **Certified Scaffold Supervisor II-T** – can supervise, inspect, and sign scaffold tags for *only* tube and coupler scaffolds less than 12.2 meters (40 feet) tall, excluding special scaffolds. At least three (3) years of scaffold erection experience is required before seeking certification as a Certified Scaffold Supervisor II-T.
 - **Certified Scaffold Supervisor II-S** – can supervise, inspect, and sign scaffold tags for *only* system scaffolds or fabricated tubular frame scaffolds (including tubular braces and tie-ins) less than 12.2 meters (40 feet) tall, excluding special scaffolds. At least three (3) years of scaffold

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erection experience is required before seeking certification as a Certified Scaffold Supervisor II-S.

- **Certified Scaffold Inspector** – can inspect and sign scaffold tags for *all* scaffolds, including special scaffolds.

11.4 T&D or an outside testing agency approved by LPD and T&D will administer Saudi Aramco scaffold supervisor and inspector certification tests to Saudi Aramco and contractor employees. Upon successful completion of the Saudi Aramco Certified Scaffold Supervisor or Certified Scaffold Inspector test, a pocket card will be signed and issued by T&D, or an approved testing agency, to the individual confirming him as either a Saudi Aramco Certified Scaffold Supervisor I, II-T, or II-S, or a Certified Scaffold Inspector, as applicable. Multiple certifications for a single individual are permitted (e.g., a Scaffold Inspector may also be certified as a Scaffold Supervisor – however, per paragraph 6.4, he shall not sign the same scaffold tag in both positions).

11.5 Every Certified Scaffold Supervisor I, II-T, or II-S and Certified Scaffold Inspector shall have his valid Saudi Aramco certification pocket card (bearing his name and photograph) in his possession at all times while at the job site.

★★11.6 Contractor personnel working for Saudi Aramco offshore project locations, who do not have a Saudi Arab Government Residence Permit (Iqama) and/or Saudi Aramco ID card, but possess scaffold certificate from a recognized international testing organization (e.g., CITB), are permitted to supervise and inspect scaffolds based on the level of the employee's certification, but subject for approval by the proponent organization.

11.7 All organizations shall maintain records of their Certified Scaffold Supervisors and Certified Scaffold Inspectors. Certifications expire three (3) years after the date of issue. Therefore, Certified Scaffold Supervisors and Inspectors shall be re-tested and re-certified every three years.

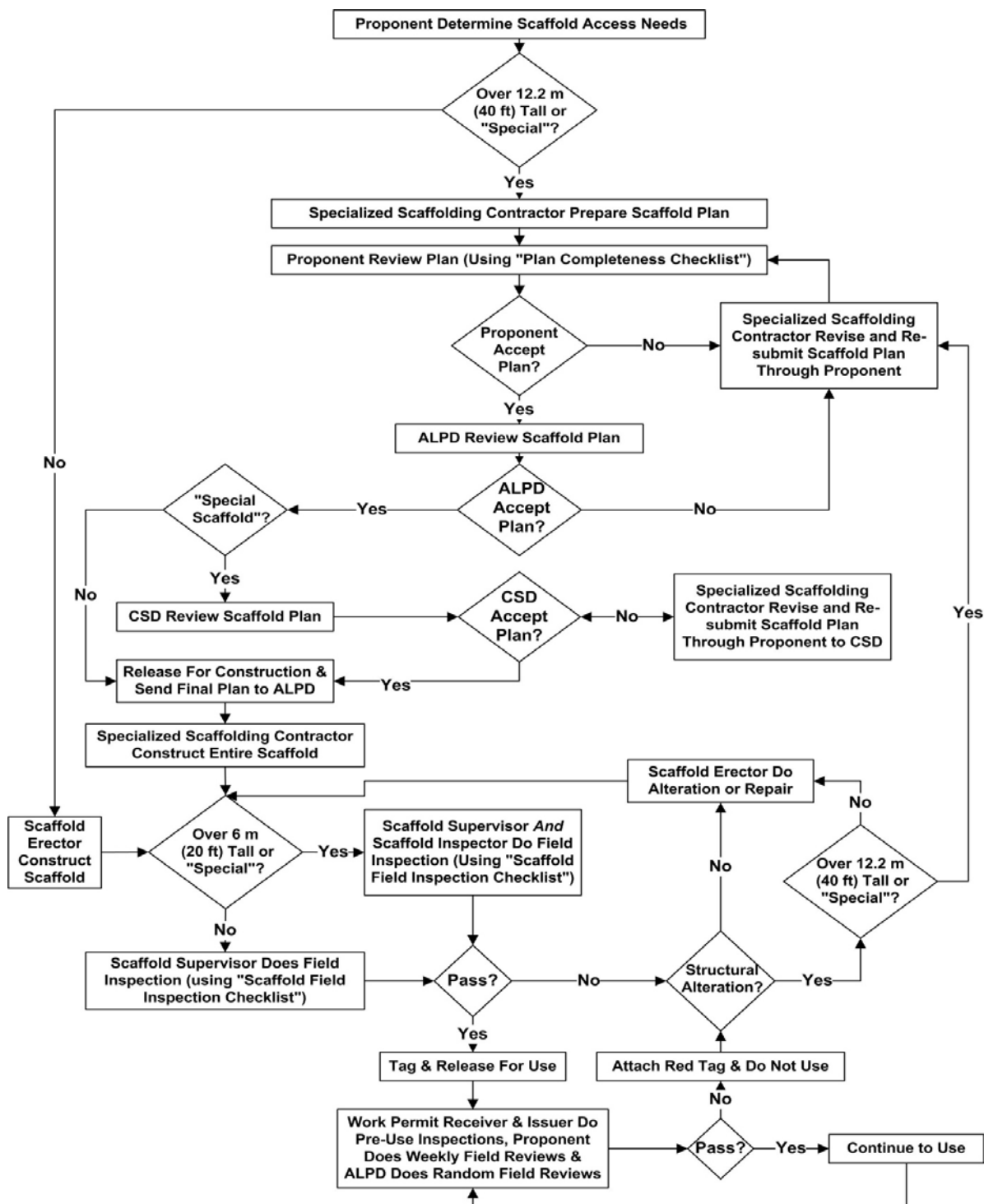
CONCURRED: _____
MANAGER
Consulting Services Department

DATE: _____

APPROVED: _____
MANAGER
Loss Prevention Department

DATE: _____

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SUPPLEMENT 8.001-1, SCAFFOLD WORK FLOW PROCESS

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SUPPLEMENT 8.001-2, SCAFFOLD RESPONSIBILITY MATRIX

Scaffold Height	Scaffold Plan (SP) Required ?	SP To Be Reviewed By Proponent And LP Area Office?	SP To Be Reviewed By CSD?	Scaffold To Be Erected By:	Scaffold Field Inspection Checklist Completed By:	Scaffold Tag(s) Signed By:
0 – 6m (0 - 20 ft.)	No	No	No	Qualified Scaffold Erector	Scaffold Supervisor Only	Scaffold Supervisor Only
6 - 12.2m (20 – 40 ft.)	No	No	No	Qualified Scaffold Erector	Scaffold Supervisor & Inspector	Scaffold Supervisor & Inspector
12.2 - 38m (40 – 125 ft.)	Yes	Yes	No	Specialized Scaffolding Contractor	Scaffold Supervisor & Inspector	Scaffold Supervisor & Inspector
Special Scaffold, including > 38m (125 ft.)	Yes	Yes	Yes	Specialized Scaffolding Contractor	Scaffold Supervisor & Inspector	Scaffold Supervisor & Inspector

Note: Special scaffolds also include those cantilevered by more than 3m (10 ft.) and those with a total platform area of more than 30 sq. meters (320 sq. ft.) that are supported by or hung from an existing structure or are within 3 meters (10 ft.) of any other scaffold supported by or hung from the same structure.

Unless scaffold is below 1.8m (6 ft.) tall and tagging is not required per paragraph 3.2.

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★★SUPPLEMENT 8.001-3, SCAFFOLD PLAN COMPLETENESS CHECKLIST

SCAFFOLD PLAN COMPLETENESS CHECKLIST

SA Form # 9613

Scaffold Location / Description _____

SECTION A: FOR SCAFFOLDS OVER 12.2 m (40 ft) TALL, CHECK TO INDICATE IF IN SCAFFOLD PLAN:

- ☒ **Scope of Work**
- 1a ☐ Brief description of work to be performed from the scaffold
- 1b ☐ Duration of work
- 1c ☐ Exact Location where the scaffold will be erected
- ☐ **Scaffold Drawings**
- 2a ☐ Height of scaffold shown
- 2b ☐ Length and width of scaffold at base shown
- 2c ☐ Type of scaffold (tube & coupler, fabricated tubular frame, system, etc.) noted
- 2d ☐ Light-duty, Medium-duty, or Special-duty load rating noted and used for design of scaffold
- 2e ☐ Maximum intended load (personnel, equipment, tools, and materials) per working level noted
- 2f ☐ Total number of planked/platformed levels noted
- 2g ☐ Maximum number of working levels noted
- 2h ☐ Tubing size (diameter, wall thickness) and material specification (including yield stress) noted
- 2i ☐ Platform units type, size, and material specified
- 2j ☐ Drawings adequately show complete construction information and details for the scaffold:
- 2k ☐ - Posts, bearers, runners, horizontal (plan) and vertical bracing, etc.
- 2l ☐ - Attachments or ties to buildings or other structures
- 2m ☐ - Ladders or other access to all working levels
- 2n ☐ - Guardrail system locations, dimensions, and toprail, midrail and toeboard sizes
- 2o ☐ - Base support details, including base plates and sills
- 2p ☐ Drawn to scale on at least "C" size paper and scale noted on drawings
- 2q ☐ Scaffold fully and properly dimensioned
- 2r ☐ Plan views show complete layout of all horizontal members (bearers, runners, horiz. bracing, etc.)
- 2s ☐ Elevation views show complete layout of all vertical members (posts, braces, etc.)
- 2t ☐ All potential obstructions and interferences (piping, cable trays, platforms, etc.) shown and cleared
- 2u ☐ All areas to remain free of scaffold obstructions shown (roads, corridors, etc.)
- 2v ☐ If stairs are used, adequate handrails are provided and detailed
- 2w ☐ Note or signature on drawings to show they have been checked for accuracy
- ☐ **Other information**
- 3a ☐ Manufacturer's specifications and technical data for materials, planks, fittings, etc., included
- 3b ☐ Names and contact phone numbers for the proponent organization and scaffolding contractor

SECTION B: FOR SPECIAL SCAFFOLDS - including over 38 m (125 ft) tall - CHECK IF IN SCAFFOLD PLAN:

- ☐ **Structural Calculations**
- 4a ☐ Design loads, including uniformly distributed and concentrated loads and locations
- 4b ☐ Complete design calculations provided verifying "safety factor of 4" for scaffold and all components
- 4c ☐ Calculations verifying foundation and/or existing support structure capacity
- 4d ☐ If required, wind load analysis for all critical wind directions as per SAES-A-112
- 4e ☐ Calculations prepared as per SAES-A-204 (including plots if computer program printouts submitted)
- 4f ☐ Calculations legible and in English
- 4g ☐ Calculations checked and approved by a qualified and degreed structural engineer
- ☐ **Support Information/Technical Data**
- 5a ☐ Load Tables for posts, bearers, planks, etc.
- 5b ☐ Coupler Safe Working Loads (SWL)
- 5c ☐ Other: _____

The needed information, shown above, has been verified as being contained within this scaffold plan package by:

Scaffolding Contractor		Proponent	Loss Prevention
Signature			
Print Name			
Organization			
Date			
Telephone Number			
Is this scaffold plan complete (Y/N)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>