

Engineering Standard

SAES-T-909

28 January, 2004

Communications Pole Lines

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Karr, S.K.

Mckew, M.P.

Qatari, S.A.

Tageldin, T.G.

Saudi Aramco DeskTop Standards

Table of Contents

1	Scope.....	2
2	Conflicts and Deviations	2
3	References.....	2
4	Design.....	2
5	Specifications.....	3

Previous Issue: 29 November, 2000 Next Planned Update: 1 February, 2009

Revised paragraphs are indicated in the right margin

Primary contact: Tag Tageldin on 872-9152

Page 1 of 6

1 Scope

This standard prescribes mandatory compliance governing Communication Pole Lines, and it is recognized as the engineering criteria to be applied to Saudi Aramco Communication Pole Lines installation.

2 Conflicts and Deviations

Any deviations, providing less than the mandatory requirements of this standard require written waiver approval as per Saudi Aramco Engineering Procedure [SAEP-302](#).

3 References

The selection of material and equipment, and the design, construction, maintenance, and repair of equipment and facilities covered by this standard shall comply with the latest edition of the references listed below, unless otherwise noted.

3.1 Saudi Aramco References

Saudi Aramco Engineering Procedures

[SAEP-103](#)

Metric Units of Weights & Measure

[SAEP-302](#)

*Instructions for Obtaining a Waiver of a
Mandatory Saudi Aramco Engineering
Requirements*

Saudi Aramco Engineering Standards

[SAES-B-068](#)

Electrical Area Classification

[SAES-P-107](#)

Overhead Distribution Systems

3.2 Industry Codes and Standards

General Telephone and Electronics

GTE 909

Pole Lines

National Electrical Code (NEC)

National Electrical Safety Code (NESC)

4 Design

The General Telephone and Electronics (GTE) Series 909 on "Pole Lines" is hereby recognized as Saudi Aramco Engineering Standard SAES-T-909. The following

specifications refer to General Telephone and Electronics Practice GTE 909 Series, which is part of this standard.

4.1 General

- 4.1.1 In general, this section deals with the planning and engineering of communications pole lines in non-hazardous areas. The information contained in this standard should be used in conjunction with the appropriate sections of National Electrical Safety Code (NESC) and/or National Electrical Code (NEC) when dealing with facilities in an area classified as hazardous per the NEC and [SAES-B-068](#).
- 4.1.2 Reference in this standard to any particular manufacturer by name in connection with any product is only intended for the purpose of example or description (i.e., type, specification and quality) of that product and items actually purchased may be of any manufacture that meets technical requirements.
- 4.1.3 The adopted standard is reproduced, (by permission of GTE), directly from the GTE Practice. As a consequence, English (US) units of measurement are utilized with no attempt at metrication. For information concerning the conversion of English units of measurements to metric units [SAEP-103](#) (Metric Units of Weights & Measure) should be referenced.

5 Specifications

The text in each paragraph below is an addition, exception, modification, or deletion to GTE 909 as noted. Paragraph numbers not appearing in GTE 909 are new paragraphs to be inserted in numerical order.

909-000-070

(Issue 1) February, 1962

Pole Line - General Planning

Exceptions:

- *General; for the depth of pole setting (depth in ground) reference should be made to Saudi Aramco Engineering Standard [SAES-P-107](#):*
 - *Paragraph 1.1; in last sentence, change word "toll" to trunk:*
 - *Paragraph 2.2; delete the word "open", in two places, in the second sentence:*
 - *Section 4, title; paragraph 4.1, first sentence; change the word "toll" to trunk:*
 - *Paragraph 5.1; in first sentence change word "toll" to trunk; delete "etc." at end of last sentence and add the following: "and Company surveys and aerial photos":*
-

- Paragraph 7.1; in first sentence change word "Toll" to Trunk: subparagraph (h); delete word "open":
- Paragraph 8.3; delete the word "farming" from the first sentence:
- Paragraph 8.5, subparagraph (e); change word "permits" to permission: subparagraph (j); change word "owners" to users:
- Paragraph 9.1; in third sentence, change word "companies" to utilities:
- Paragraph 9.4; change word "company" to utility:
- Paragraph 9.5; in first sentence, change word "companies" to utilities: in second sentence, change word "company" to utility:

909-200-089

(Issue 1) February, 1962

Timber Products and Preservation

Exceptions:

While this adopted section of the GTE practices contains some excellent information concerning timber products, it must be borne in mind that GTE is a North American Utility and therefore, the timber discussed and growing locations given are indigent to the North American continent. In addition, this section is intended to be used only as it relates to timber products commonly used in Communications Outside Plant construction.

In general, the following specification should be applied to wooden poles for communications use:

- *ANSI Specification 05.1, Group D, 55 MPa fiber stress; Douglas Fir or Southern Yellow Pine; Species: Loblolly, long leaf, Short-Leaf or Slash;*
- *Other pine species must be guaranteed to meet 55 MPa fiber stress and equal decay resistance; full length creosote treated per AWWA*
- *Specification P1-54, using the AWWA C4-54 Empty Cell Pressure Process; 0.1-0.13 kg (8-10 pounds) minimum preservative retention per cubic meter; not drilled; without gains; slant roofed; Brand Mark at 4.6 meters from pole butt.*

909-250-070

(Issue 2) July, 1966

Pole Lines - Selection of New Poles

Exceptions:

This section is issued for information purposes only. Generally, poles for communications use will be obtained directly from Saudi Aramco Material Class 14, this section will be of use in selecting the "class" of pole required:

- Paragraph 2.05; in last sentence, change word "company" to utility:
 - Paragraph 8.01; after last sentence
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- *Add statement: Province can be considered*
- *A Light Loading Area": line classifications AA, A and B:*
- *B: 12.01; delete entire statement referencing "the standard list of materials":*

909-300-070

(Issue 1) November, 1961

Detail Design - Locating and Spacing Poles

Exceptions:

- *Paragraph 2.02 & 2.03; change all appearances of the word "owner" to "user":*
- *Paragraph 2.17; in the first sentence, delete the word "coty" and substitute the words "roads and well-sites" in its place; in the second sentence, once again delete "city" and this time substitute "planning department" in its place:*
- *Paragraph 2.23; delete the words "country", "state, or other":*
- *Paragraph 3.02; in the second sentence, change the word "companies" to utilities:*
- *Paragraph 3.04; information concerning open wire transpositions is not applicable to Saudi Aramco.*

909-300-071

(Issue 1) November, 1961

Detail Design - Grading

Exception:

None.

909-300-072

(Issue 1) November, 1961

Detail Design - Guying - General

Exceptions:

- *Paragraph 1.01; delete word "open" from first sentence:*
- *Paragraph 3.02; delete word "open" from first sentence"*
- *Paragraph 3.03; add, at the end of sentence, "FINDER, PULL; SAMS stock number 36-141-381":*
- *Figure 3; add, "36-141-381"*
- *Paragraph 4.01; add an asterisk in front of the word "guy", in the second sentence: at the paragraphs end, add the following:*

"Automatic Electric part number 577532, or equivalent (Sillcocks-Miller)":

909-300-073

(Issue 1) December, 1961

Pole Line - Detail Design-Guying Problems

Exceptions:

- *Paragraph 1.1(g); delete the word "open" from the first sentence:*
- *Paragraph 1.2; this informational is included for informational purposes only.*

Revision Summary

28 January, 2004

Revised the "Next Planned Update". Reaffirmed the contents of the document, and reissued with minor revisions.