



TECHNICAL REQUIREMENTS

AUTOMATION AND INSTRUMENTATION

Document No. OL-TR-IR-000

ERECTION TECHNICAL DOCUMENTATION COMPLETION OF WORKS

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1. SCOPE

This Specification covers basic requirements for Contractors regarding technical documentation to be submitted upon completion of works.

2. REFERENCES

OL-TR-GR-000 *General Requirements*

For other references see:

OL-TR-IR-000 *Automation and Instrumentation. General*

3. TERMS AND DEFINITIONS

For terms and definitions see:

OL-TR-IR-000 *Automation and Instrumentation. General*

4. TECHNICAL DOCUMENTATION TO BE SUBMITTED UPON COMPLETION OF WORKS

Each Contractor, upon completion of installation (repair) of instrumentation and automation (hereinafter referred to as I&A) devices in accordance to the design and Defect/Punch Lists provided by the Operations, shall be required to submit the following technical documentation:

5. REPORTS (PROTOCOLS) ON COMPLETION OF TECHNICAL TESTING FOR INSPECTION OF LEAKPROOFNESS OF IMPULSE LINES/PNEUMATIC CABLE OVERHEAD TRANSMISSION LINES

In the event the impulse lines or pneumatic lines are installed, each Contractor shall be required to perform technical testing to inspect the airtightness of impulse lines and pneumatic cable overhead transmission lines, and to issue Reports (Protocols) on Completion of Technical Testing for Inspection and Airtightness of Impulse Lines/Pneumatic Cable Overhead Transmission Lines. The Report (Protocol) shall include the following: work completion date (the date the report was issued); title/description of facility/unit; project No. (based on the Defect/Punch List); Work Order Number; testing results; identification number of impulse line, pneumatic cable overhead transmission line in accordance to the Installation Diagram; type of the pipe; operating pressure; testing pressure; results of the testing explaining if it can be used. The Report (Protocol) must be signed by the persons who have conducted the testing (please, specify their name, surname, position), also Work Supervisor, and Chief of relevant Operational Division at the Instrumentation and Automation Shop (hereinafter referred to as I&A) or his/her delegate.

6. PROTOCOL ON RESISTANCE MEASUREMENT OF CABLES (UP TO 1000V VOLTAGE) AND WIRING INSULATION

6.1

In the event cables and wiring have been installed, the Contractor shall be required to perform resistance measurements of cables (up to 1000V voltage) and wiring according to the Electrical Equipment Installation Procedure (hereinafter referred to as EEIP) and Electrical Equipment Testing Norms and Scopes, and issue Protocol on Resistance Measurement of Cables (up to 1000 V voltage) and Wiring Insulation.

- 6.2** The Protocol shall include the following: work completion date (the date the report was issued); title/description of facility/unit; project No. (based on the Defect/Punch List); Work Order Number; instruments used for purposes of measurement by indicating instrument name, make, tag number and instrument inspection date; results and conclusions of the performed measurement; conclusions on cable thread marking (which must be compliant to the requirements specified in EEIP, Electrical Equipment Testing Norms and Scopes, Safety Regulations on Operation of Electrical Equipment (hereinafter referred to as ROEE), cable (buses) insulation resistance (must be compliant to the requirements specified in manufacturer's technical operation manuals (hereinafter referred to as TOM), EEIP, and Electrical Equipment Testing Norms and Scopes). The Report (Protocol) must be signed by the persons who have conducted the testing and Work Supervisor (please, specify their name, surname, position).

7. PROTOCOL ON INSPECTION OF CIRCUIT FROM GROUNDING DEVICES (NULLIFICATION LINE) TO GROUNDED (ZEROED) ELEMENTS

In the event the instruments and/or el. cabinets have been installed, the Contractor shall be required to perform inspection of circuit from grounding devices (nullification line) to grounded (zeroed) elements in compliance with EEIP and Electrical Equipment Testing Norms and Scopes and issue Protocol on Inspection of Circuit from Grounding Devices (nullification line) to Grounded (zeroed) Elements. The Protocol shall include: work completion date (the date the report was issued); title/description of facility/unit; project No. (based on the Defect/Punch List); Work Order Number; instruments used for purposes of measurement by indicating instrument name, make, tag number and instrument inspection date; measurement results (measured cable or instrument resistance between respective elements) and conclusions. Measurement results must be compliant to the requirements specified in EEIP, Electrical Equipment Testing Norms and Scopes. The Report (Protocol) must be signed by the persons who have conducted the testing and Work Supervisor (please, specify their name, surname, position).

8. WORK DRAWINGS WITH THE MARKED DEVIATIONS FROM THE DESIGN (IF ANY)

During the installation, the Contractor (Contractor's authorized individual/Work Supervisor) shall mark the deviations from the design, i.e. various inconsistencies of designs, drawings, diagrams, sketches, etc. accordingly on the work drawings as well as other deviations, changes, modifications, updates, etc. and shall coordinate them with the Head (Engineer) of the respective Section at the Instrumentation Shop, Head or Mechanic of respective Operations Division Section (if necessary), and the author of the design. Each page of the Work Drawing must be signed by the Work Supervisor by adding a note "as-built documentation".

9. OTHER DOCUMENTATION (INSTRUMENT CALIBRATION PROTOCOLS, MANUFACTURER'S MANUALS, AND THE LIKE)

In addition to the technical documentation, the Contractor shall be required to enclose any other documentation if such was provided along with the to-be-installed I&A instruments (such as instrument calibration protocols, manufacturer's manuals, calibration certificates, installation manuals, etc.).

10. INSTALLATION COMPLETION REPORT (ATTACHMENT A)

- 10.1** Upon installation of installation material and equipment, etc. as planned in the design (punch list) and completion of respective testing and inspection work, the Contractor shall be required to notify the Head of the respective Section at the Instrumentation

Shop on the completion of the above. The Head shall form a committee (at least three members required) chairing it unless otherwise instructed by higher management. The commission shall consist of at least three members. The commission may consist of Head or Mechanic of the respective Section at Operations Division, the author(s) of the design, Instrumentation Shop personnel (decision to be made by the chairperson of the committee). The committee shall inspect if the performed installation work is compliant to the requirements of the design or other normative documents, and design deviations are marked in the work drawings (if any), and required testing works have been completed and recorded in a form of respective reports (protocols); the committee shall provide comments and conclusions regarding the performed installation work. The Chairperson of the Committee shall issue the aforementioned Report which indicates the conclusions by the Committee regarding the performed installation work and specifies the to-be-submitted technical documentation. The Report shall be signed by the members of the Committee and the Contractor's authorized individual (Work Supervisor). The Report shall be approved by the refinery's Chief Instrumentation Engineer.

- 10.2 The report approval date shall be the date the installation work was completed. A copy of the approved report and technical documentation shall be submitted to the chairperson of the committee, and a copy of the report and/or technical documentation shall be provided upon request by others.
- 10.3 In case the committee identified any incomplete installation work, defects, design violations, etc. (hereinafter referred to as installation defects), the latter must be included in the report.
- 10.4 The committee is the one to make a decision whether the report can be signed before the installation defects have been eliminated.
- 10.5 If the committee decides the report can be signed, it shall be necessary to indicate in the report the date the installation defect will be eliminated, and the Contractor, upon signing the report, assumes the responsibility to eliminate the installation defects by the date specified.
- 10.6 Contractor shall be responsible for submitting the complete package of technical documentation in due time.
- 10.7 For major projects, it shall be necessary to classify documentation based on the measuring-control loops, i.e. prepare „Passport“ of measuring-control loops.
- 10.8 Please find below a typical list of documentation. If the specifics of the work performed or the Contractor supervising the work require additional documentation (e.g. Report on Concealed Work, Loop-Check Protocols, etc.), it shall be necessary to validate/register officially the documents.

NOTE: The description form has been provided in Attachments B and C. If necessary, the description forms can be changed (e.g. when preparing Passport of measuring-control loops).

ATTACHMENT A. REPORT ON COMPLETION OF INSTALLATION WORKS

APPROVED BY
Chief Instrumentation Engineer

(Signature, Name, Surname)

_____, 20____

**REPORT ON
COMPLETION OF INSTALLATION WORK**

_____, 20____

Committee consisting of

the Chairperson

(Name, surname, title)

Members

(Name, surname, title)

(Name, surname, title)

(Name, surname, title)

with the participation of Contractor (Work Supervisor)

(Name, surname, title)

has inspected the installation work performed in the unit

_____ by the following

(description of unit/facility)

Contractor _____ performed installation works
(Contractor's name)

in accordance to the following design (punch lists)

_____,
(project title)

Work Order No. _____, and inspected the technical documentation and identified the following:

(the description above shall include performed work, information on whether installation work comply to the design (punch lists) requirements, whether deviations from the design have been indicated in the work drawings (if necessary), whether required testing and inspection work has been performed and measurements taken, and relevant Reports/Protocols have been issued (as listed in Attachment B of the herein Report).

The Committee identified the incomplete installation work - defects must be eliminated by the following date:

Work Description	Due date

NOTE: If the Committee identified incomplete installation work, or defects, design violations, etc. (hereinafter referred to as installation defects), the latter must be listed in the Report. The Committee shall be the one to make a decision if the report can be signed before the installation defects are eliminated. If the Committee decides that the report can be signed, it shall be necessary to indicate date the installation defect will be eliminated. While the Contractor, upon signing the Report, undertakes the responsibility to eliminate the installation defects by the date specified.

The Commission hereby acknowledges that the completed installation work meet the requirements and therefore is considered to have been fully completed.

Attachments of the Report:

1. Work drawings, _____ pages.
2. Reports (protocols) on the completed testing activities, protocols of measuring and inspections with the description list included, I set of _____ pages.
3. Other documents with the description list, I set of _____ pages.

Chairperson of the Committee:

(signature)

(Name, surname)

Members of the Committee:

(signature)

(Name, surname)

(signature)

(Name, surname)

(signature)

(Name, surname)

Contractor:

(signature)

(Name, surname)

The above Report (1 copy) with the enclosures and relevant documents has been

accepted by:

(title)

(signature)

(Name, surname)

forwarded by:

(title)

(signature)

(Name, surname)

(date)

ATTACHMENT B. LIST OF REPORTS

(Contractor's name)

Description List of

Reports (Protocols) on Completed Testing, Measuring and Inspections

Item No.	Document (Report, Protocol, etc.) Description	Document Date	Document No.	Document Page Number	Comments

Description List consists of _____ pages.

(please, specify number)

Prepared by: _____

(Position)

(Signature)

(Name, Surname)

(Date)

ATTACHMENT C. LIST OF OTHER DOCUMENTS

(Contractor's name)

Description List of
Other Documentation

Item No.	Document (Report, Protocol, etc.) Title	Document Date	Document No.	Document page number	Comments

Description List consists of _____ pages.
(please, specify number)

Prepared by: _____
(Position) (Signature) (Name, Surname)

(Date)