ALASKA LEGISLATURE COMMITTEE FILES 1993-1994 8672
8423 SENATE LABOR & COMMERCE

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Senator Drue Pearce
District G

March 27, 1992

Mr. Gordon Stevens
10301 Tree Top Lane
Anchorage, AK 99516

Dear Gordon,

Last week, I received a copy of your letter about the regulations for Electrical Examiners and Mechanical Examiners from Representative Jim Zawacki. Subsequently, my office began researching the matter. Then, I received your note.

As I'm certainly no expert in the area, I asked Ann Boudreaux, the Director of Occupational Licensing within the Department of Commerce and Economic Development, what she thought. As you can see by the attached memo, she not only thinks that the license requirement should be voided but the boards as well.

Presently, the Governor's Task Force on Boards and Commissions is reviewing some 150 such entities in state government. As I've been appointed to that task force, I'll surely take your comments to heart.

Gordon, I can't promise that the statute will be repealed this session. We're well past the midway point of the session; anything introduced now simply doesn't have time to make it through the legislative process. But, you can be sure that I'll keep your letter, and Ms. Boudreaux's comments on file and take some action next year.

If I felt we could do something in the remaining six weeks, I'd sure take a crack at it. But, time is very short.

Sincerely,

Drue Pearce

Enclosure: Boudreaux Memo
Proposed Regulations

cc: Representative Jim Zawacki

VECO, INC.

QUALITY CONTROL PROGRAM

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VECO, INC.

QUALITY CONTROL PROGRAM

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	STATEMENT OF POLICY	

VECO, Inc. is dedicated to providing the organization and commitment that will establish and execute a Quality Control Program as described in this manual. All construction activities shall be performed according to the Quality Control Program, contract specifications, applicable codes and jurisdictional regulations.

If a conflict occurs between the requirements of this Quality Control Program and the contract documents, the latter shall take precedence.

VECO senior management fully supports the establishment and implementation of the Quality Control Program, with the understanding that "Quality of Work" is the primary responsibility of all company employees, and that Quality Control starts with each individual.

The Quality Control department will administer this program and shall be independent of construction management personnel with the authority to identify nonconforming items, recommend dispositions and corrective action, and verify implementation of those recommendations.

When a nonconforming condition can not be resolved between project management and Quality Control department personnel, the problem will be elevated to the attention of VECO senior management for resolution.

The Quality Control Program may only be revised or modified by authorization of the Quality Assurance Manager and Vice President of Construction.

R.F. Mckee
Vice President of Construction

12/15/91
Date

VECO, INC.
QUALITY CONTROL PROGRAM
ORGANIZATION AND FUNCTION

Each project shall establish a Quality Control Program as described in this manual, and the Quality Control Supervisor will be responsible for the implementation of the program. The Quality Control Supervisor shall be independent from Project Management while maintaining a direct line of communications and reporting authority with the Project Manager for any activities that do not directly effect the implementation of the Quality Control Program.

The Quality Control Supervisor shall report directly to the Quality Assurance Manager involving any activities that effect the quality of the project.

Requirements of the Quality Control Program and Inspection Procedures are defined in this document. The first section of this manual deals with the general requirements necessary to implement the Quality Control Program.

The second section provides the minimum inspection requirements for each construction activity. Inspections shall be performed by the Quality Control department as detailed in the applicable inspection procedures. If there is a conflict between the requirements of the inspection procedures and the contract documents, the latter shall take precedence.

All subcontractor's shall be required to submit their own Quality Control Program covering the services provided by the company. The Quality Control Supervisor shall approve the subcontractor's Quality Control Program prior to the start of construction. As a minimum all subcontracted services shall be performed to the requirements of the VECO Quality Control Program.

The Quality Control Supervisor shall be responsible for performing periodic audits of all subcontractor activities. Audits shall ensure compliance with the subcontractor's Quality Control Program, VECO Quality Control Program and all contract documents.

It is not the intent of this program to imply that all the staff positions and inspection requirements described herein are applicable for every project. Depending on the project size, two or more of the staff positions may be performed by one individual. The Quality Control Supervisor is responsible for determining the project's inspection requirements.

Project Manager: The Project Manager is an integral part of the quality process by ensuring that "quality workmanship" is a fundamental requirement of the project, and the Quality Control Staff have the full support and cooperation of all construction personnel.

Quality Assurance Manager: The Quality Assurance Manager is responsible for assuring that the Quality Control staff are complying with requirements of the contract, and Quality Control Program by performing periodic job site visits, audits and communication with the Client representative.

Quality Control Supervisor: The Quality Control Supervisor is responsible for the implementation of the Quality Control Program and supervision of the Quality Control staff.

Quality Control Staff: The Quality Control Staff shall be responsible for the inspection of workmanship, and materials as defined in this manual. Inspections performed by the QC Staff shall be documented as detailed in the applicable inspection procedures.

Project Engineer: The Project Engineer is responsible for defining the project scope and directing the activities of the Discipline Engineers. The Project Engineer and Quality Control staff work closely together to advise each other of activities that effect project quality.

Discipline Engineer: The Discipline Engineer is responsible for ensuring his discipline's activities are constructed according to all the contract requirements and specifications.

Material Coordinator: The Material Coordinator is responsible for purchasing, inspection and requesting material in accordance with contract requirements.

Discipline Superintendent: The Discipline Superintendent reports to the Project Manager and is responsible for directing the foreman and craft personnel while ensuring construction activities are completed according to all the contract requirements.

Section: 3.0

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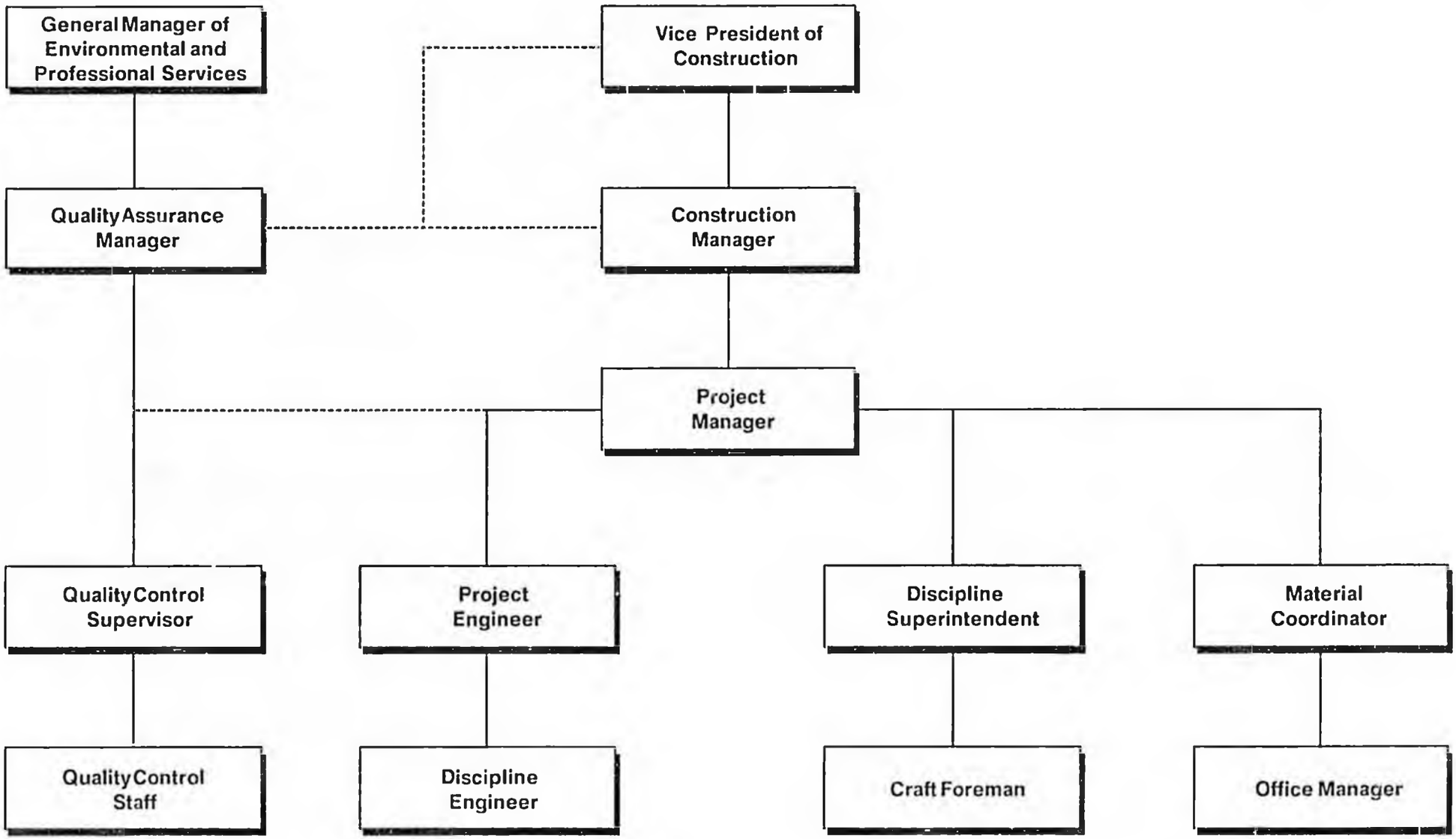
PROJECT QUALITY CONTROL ORGANIZATIONAL CHART

Date: 12/06/91

Revision No: 0



VECO, INC.
QUALITY CONTROL PROGRAM
DOCUMENT CONTROL

The Project Engineer is responsible for the document control program, which includes all construction and reference drawings, contract documents and specifications. He shall implement a record file for all construction and reference drawings. When new revisions are issued they shall be entered into a revision log and the record file shall be updated by placing the superseded drawing under the new revision and writing revision or deleted on the superseded drawing.

The Project Engineer will issue the latest drawing revisions to the Discipline Engineer who will update his working set of drawings and issue the revisions to the Quality Control department and the Discipline Superintendent. All superseded drawings from the Discipline Engineer, Quality Control department and Discipline Superintendent will be destroyed, or controlled in such a manner as to ensure they can not be accidentally used for construction.

The Discipline Superintendent is responsible for ensuring that the latest drawing revisions are used for construction by field personnel.

The Discipline Engineer shall be responsible for field as-builting. The drawing sizes, type and contents of the as-builts will be completed as described in the Client specifications. After each as-built is complete it will be given to the Project Engineer who shall maintain an as-built record file and log.

The Quality Control department shall perform random audits of the Project Engineer, Discipline Engineer and Discipline Superintendents documents and drawings to ensure compliance.

As-built drawings will be transmitted to the Client by letter as each discipline is completed. Individual as-built drawings may also be transmitted when requested by the Client.

VECO, INC.

QUALITY CONTROL PROGRAM

MATERIAL CONTROL

All permanent material supplied by VECO shall be purchased in strict compliance with the contract documents and specifications. The Project Engineer is responsible for reviewing all purchase orders to ensure they contain the necessary information to allow the Material Coordinator to purchase material that meets contract requirements.

Material supplied by the Client will be requested according to the contract documents. The Project Engineer is responsible for providing the Material Coordinator with all the pertinent information necessary to request the appropriate material.

The Material Coordinator shall inspect all material received, whether VECO purchased or Client supplied. Inspection shall be performed to ensure compliance with the manufacture's information, applicable codes or standard, specifications and drawings and documented by the Material Coordinators signature on the receiving documents..

Material requiring a grade or type marking shall be identified in a manner that allows traceability until installation of any section, or pieces not used at one time.

If a deficiency is noted an, Over Short & Damage report shall be filled out and the information entered into the Material Inspection Log. The material will be isolated until a resolution is reached by the Project Engineer, Quality Control department and the Client representative, at which time the OS&D report and Material Inspection Log will be signed as completed.

Material shall be controlled and stored to prevent damage from handling, environmental conditions and over stacking.

Individual material that has an expiration date will be closely monitored in storage so like items with less shelf life will be issued for use first.

Material such as paints, coatings, in situ foam, etc. that require specific temperature range for storage shall be kept according to the manufacturer's recommendations.

The Material Coordinator shall maintain complete records of material test reports, certificates of compliance and purchase orders on all material purchased by VECO. A record of all material requisitions of Client supplied material shall also be kept by the Material Coordinator.

Vendor furnished information supplied with a product will be maintained and turned over to the Client at the completion of the project, or as requested.

The Quality Control department will periodically perform inspections to ensure all material and conditions comply with the contract documents and specifications. Inspections results will be documented on an inspection report form and maintained with the other project quality control documentation.

VECO, INC.

QUALITY CONTROL PROGRAM

TEST CONTROL

All testing required to satisfy the contract documents, specifications, applicable codes, standards and any jurisdictional requirements will be witnessed or monitored by the Quality Control department. Testing will be performed in accordance with the applicable sections of each Inspection Procedure and the Client specifications.

The Client shall be given adequate notice to allow for the witnessing of any test, or portions of tests that may be required. All test results shall be documented on Client supplied forms. When required, VECO will develop any necessary forms in addition to those provided by this program. Additional forms that are developed will be submitted to the Client for approval prior to use.

The documents will be signed by a responsible party of the contractor and the Client representative. This documentation will be maintained and turned over to the Client at the completion of the project.

VECO, INC.
QUALITY CONTROL PROGRAM
TOOL AND INSTRUMENT CONTROL

All tools and instrumentation supplied by VECO shall be purchased in strict compliance with the contract documents and specifications. The Material Coordinator is responsible for reviewing all purchase orders to ensure they contain the information necessary to allow the tools and instrumentation purchased to meet the contract requirements.

All tool and instruments, whether supplied by VECO or the Client shall be issued in good working condition, calibrated as required by the manufacturer's recommendations and Client specifications. If there is reason to question the calibration or accuracy of any tools or test instruments, they shall be recalibrated before use.

The Discipline Superintendent is responsible for ensuring only calibrated tools and instruments are used for construction activities.

The Quality Control department shall verify each tool and test instrumentation used to ensure they are calibrated as required by the Clients specifications. A complete record of all calibrations will be maintained by the QC department.

Special attention will be given to ensure proper grounding of electrical tools. All electric power tools, insulated tools and rubber protective devices shall be inspected by the tool room personnel before their issue. If there is reason to question the condition of these tools, they shall be tested. Electric power tools shall be grounded, or be of the self-insulated type. Ground wires for the protection of the craftsman shall not be disturbed or tampered with. Extension cords, power tools and protective devices found to be worn, frayed or defective shall be tagged and removed for repair or disposal.

VECO, INC.
QUALITY CONTROL PROGRAM
NONCONFORMANCE / CORRECTIVE ACTION

Inspections will be performed by the Quality Control department throughout the duration of construction activities. These inspections will be performed to ensure material and workmanship meet contract documents, specifications, applicable codes and jurisdictional requirements.

The term corrective action may apply to item(s) that both do, and do not require a Nonconformance Report. Corrective action is the identification of the cause, and action required to prevent recurrence of an unacceptable condition. This is an integral part of the Nonconformance Report and can also be used in the deficiency section of the Inspection Report to help prevent recurrence of unacceptable inspection item(s).

When an inspection reveals unacceptable item(s) they will be documented on the Inspection Report in the deficiency section and entered into the Inspection Log. If the unacceptable item(s) can be brought back into compliance with the required specifications or guidelines, a Nonconformance Report shall not be required. After the item(s) have been corrected they will be signed off as complete in the Inspection Log by the Quality Control department.

A Nonconformance Report shall be written when the item(s) can not be brought back into compliance with the required specifications or guidelines.

The Quality Control department shall be responsible for the distribution, tracking, acceptance and close out of all Nonconformance Reports. The NCR report shall be filled out with all the applicable information in a clear and concise manner. Each NCR report shall be given an individual number and entered into the NCR report log.

A copy of all Nonconformance Reports shall be currently distributed to the Project Engineer, applicable construction discipline and the Client representative.

The Quality Control department shall track the progress of each NCR until completion, at which time the NCR shall be signed off as completed with the concurrence of the Client. A copy of the completed NCR shall be distributed to all the above mentioned parties.

All original Nonconformance Reports shall be kept on file by the Quality Control department. This documentation will be maintained and turned over to the Client at the completion of the project.

VECO, INC.

QUALITY CONTROL PROGRAM

CONTROL OF SPECIAL PROCESSES

Consideration shall be given to special processes such as welding, hydrotesting, and postweld heat treatment that may require written instruction beyond that provided by the Quality Control Program. Each situation involving a special process will be evaluated on a case-by-case basis by the QC Supervisor, and Project Engineer. When it is determined that extra written guidance is necessary for the successful completion of a special process, these instructions will be submitted to the Client for review and approval before use.

Personnel that perform the special processes shall be trained in the use of the equipment, techniques and written instructions required to produce acceptable quality products. The Quality Control department shall provide additional inspection, as required for these activities to ensure compliance.

VECO, INC.

QUALITY CONTROL PROGRAM

QUALITY CONTROL DOCUMENTATION

The contract requirements, specifications or other guidelines shall be reviewed by the Quality Control Supervisor at the start of each project to ensure that Client documentation requirements are completely understood and implemented.

Quality control records shall be filed, indexed, and maintained to allow easy access and retrieval. The documents shall be protected against possible theft, environmental damage and deterioration.

The forms listed in Appendix 1 shall be used to document inspections required by the applicable inspection procedures. Documentation methods for inspections other than the forms provided may be used if approved by the Quality Control Supervisor, and Client prior to use. Documentation of inspection results will be made on a daily basis.

All test results shall be documented on Client supplied forms. When required, VECO will develop forms in addition to those provided by this program. Additional forms that are developed will be submitted to the Client for approval prior to use.

The Quality Control Supervisor shall be responsible for ensuring the proper forms are used for documentation,and that they are filled out correctly and maintained as required by this section.

The Quality Assurance Manager will periodically perform an audit on individual project's documentation to ensure compliance with the contract requirements. The Quality Control Supervisor will receive an audit report noting any findings or information on the condition of his documentation files.

Documentation will be maintained by the Quality Control department until the completion of the project. All documents required by the specification or guidelines will be transmitted to the Client for review and acceptance.

VECO, INC.
CIVIL
INSPECTION PROCEDURE

1.1 SCOPE

This procedure outlines the inspection activities and responsibilities when Civil construction is performed by VECO.

1.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent and Quality Control department.

1.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of construction activities.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Issue revised drawings to the Discipline Engineer.

1.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Verify control monuments and bench marks are correct and adequately protected.

Monitor survey crew to ensure survey techniques and records are correct.

Perform field dimensional and material checks to verify construction activities are performed to the approved drawings and specifications.

1.1.1.3 DisciplineSuperintendent or designee shall:

Ensure the most current and approved drawings are used for construction.

Ensure special construction procedures are available for review by field personnel.

Oversee all construction activities to ensure work is being performed to approved drawings and specifications.

1.1.1.4 Quality Control shall:

Maintain required documentation.

Perform quality control inspections.

1.1.2 QUALITY CONTROL INSPECTIONS

In-process inspection will be performed by the Quality Control department throughout the duration of civil construction activities to ensure compliance with the contract drawings, specifications and applicable codes. At a minimum,10% of each day's activity shall be inspected for:

Location and quantity of soil excavation.

Type and condition of soil material.

Type and quantity of backfill and percentage compaction.

Correct control monuments and bench marks.

Correct survey techniques and accurate records.

VSM drilling, placement and tolerances.

Location and depth of trenching.

Elevation and quality of finish grading.

5.1.5 WELDING INSPECTION

In-process welding inspection will be performed by the Quality Control department throughout the duration of welding activity. At a minimum, 10% of each days welding shall be inspected for:

Full penetration weld fitups.

Preheat and interpass temperatures.

Base material.

Approved welding procedures.

Consumable storage.

100% of all completed full penetration and fillet welds shall be visually inspected to the requirements of the applicable construction code regardless of the NDE requirements.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of the welding.

5.1.6 NONDESTRUCTIVE EXAMINATION

Nondestructive examination requests shall be filled out and submitted to VECO, or the Client NDE contractor, for the examinations required in the applicable code and specifications. It shall be the responsibility of the inspector who performs the visual inspection to sign off the visual acceptance on the NDE request and ensure the weld(s) is marked, flagged and has adequate access for nondestructive examination.

1.1.2 QUALITY CONTROL INSPECTIONS (Cont.)

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem is developing in a general or specific area of the civil construction activities.

1.1.3 TESTING

Testing shall be performed by qualified personnel, these can include the Project Engineer, Discipline Engineer, Quality Control department or a third party agency. The type and quantity of testing to be performed shall be as specified in the contract, specifications or on the approved drawings.

1.1.4 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 1.1.5. Testing that is required by the contract, or specifications shall be documented on Client supplied forms.

1.1.5 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

VSM and Slurry Log.

VECO, INC.
CONCRETE
INSPECTION PROCEDURE

2.1 SCOPE

This procedure outlines the inspection activities and responsibilities when concrete is placed by VECO.

2.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

2.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of concrete placement.

Establish mix design requirements per drawings and specifications.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Issue drawing revisions to the Discipline Engineer.

2.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Verify control monuments and bench marks are correct and adequately protected.

Monitor survey crew to ensure survey techniques and records are correct.

Verify form work, rebar and any embedments are installed per the specifications and drawings prior to releasing for concrete placement.

Monitor batch plant.

Perform field dimensional and material inspections to verify concrete placement to the approved drawings and specifications.

2.1.1.3 Discipline Superintendent or designee shall:

Ensure the most current and approved drawings are used for construction.

Provide special construction procedures to field personnel for review.

Oversee all construction activities to ensure work is being performed to approved drawings and specifications.

2.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

2.1.1.5 Quality Control department shall:

Perform quality control inspections.

Maintain required quality control documentation.

2.1.2 QUALITY CONTROL INSPECTIONS

In-process inspection will be performed by the Quality Control department throughout the duration of concrete placement activities to ensure compliance to the contract drawings, specifications and applicable codes. At a minimum,10% of each days activity shall be inspected for:

Forms for location, size, elevation and that the forms are properly braced and supported.

Check for the correct soil conditions.

Check the placement of reinforcing steel and ensure it is correct and adequately secured.

2.1.2 QUALITY CONTROL INSPECTIONS (Cont.)

Check the placement of embedded items for type, quantity, elevation and that they are adequately secured.

Monitor the batch plant to ensure the required mix characteristics are being met.

Forms are not being removed prematurely.

Finished concrete for acceptability.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of the construction.

2.1.3 TESTING

Testing shall be performed by qualified personnel, these can include the Project Engineer, Discipline Engineer, members of the Quality Control department or a third party agency. The type and quantity of testing to be performed shall be as specified in the contract, specifications or on the approved drawings.

2.1.4 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 2.1.5. Testing that is required by the contract, or specifications shall be documented on Client supplied forms.

2.1.5 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

Concrete Prepour and Release Form.

VECO, INC.
ROTATING EQUIPMENT
INSPECTION PROCEDURE

3.1 SCOPE

This procedure outlines the inspection activities and responsibilities when rotating equipment is installed by VECO.

3.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

3.1.1.1 ProjectEngineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of equipment installation.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

3.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Monitor equipment installation to assure compliance with approved procedures and job specifications.

3.1.1.3 Discipline Superintendent or designee shall:

Monitor equipment installation to ensure compliance with approved procedures and job specifications.

Ensure special installation instructions, procedures and manufacturer's recommendations are available for review by field personnel.

3.1.1.3 Discipline Superintendent or designee shall: (Cont.)

Ensure all tools and test instrumentation are adequate for the job, properly calibrated,and in good working order.

3.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

3.1.1.5 Quality Control department shall:

Perform quality control inspections.

Maintain required quality control documentation.

3.1.2 EQUIPMENT INSPECTION

Equipment inspection can be performed by the Quality Control department, Discipline Engineer or Discipline Superintendent in coordination with the Client's Rotating Equipment Engineer, using Client procedures and instructions when required. They will be responsible for ensuring that all equipment is installed in accordance with the project specifications and Manufacturer's recommendations.

If the Discipline Engineer or Discipline Superintendent performs the required inspections the Quality Control department shall audit equipment installation activities throughout the duration of installation for:

Grouting.

Correct equipment type and condition.

Alignments and level to specifications and manufacturers recommendations.

Belts tightened to specifications and manufacturers recommendations.

3.1.2 EQUIPMENT INSPECTION (Cont.)

Oil storage.

Oil flushing.

Calibrated tools and test equipment.

Torque sequence and values.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of the equipment installation.

3.1.3 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 3.1.4. Testing that is required by the contract, or specifications shall be documented on Client supplied forms.

3.1.4 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

VECO, INC.
PIPE WELDING
INSPECTION PROCEDURE

4.1 SCOPE

This procedure outlines the inspection activities and responsibilities when shop and field welding of API 1104, ASME/ANSI B31.1, B31.3, B31.4 and B31.8 process piping is performed by VECO.

4.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

4.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of welding.

Review any design changes and or material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

4.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through Quality Control department for review and weld mark numbering.

Issue drawing revisions to the Discipline Superintendent.

Monitor production welding to ensure compliance with approved procedures and job specifications.

4.1.1.3 Discipline Superintendent or designee shall:

Determine (with assistance from quality control) the type, quantity and personnel to be given welder qualification tests.

Schedule welder testing with the Quality Control department.

Request a copy of the approved welding procedures and qualified welders roster from the Quality Control department.

Monitor production welding to ensure compliance with approved procedures and job specifications.

Coordinate NDE with the Quality Control department.

4.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings.

Route all material requests containing filler metals, flux and welding gases through the Quality Control department for confirmation before purchase.

Store all unused welding consumables per the Manufacturer's recommendations.

4.1.1.5 Quality Control department shall:

Approve and issue welding procedures.

Administer welder qualification testing.

Perform quality control inspections.

Maintain required quality control documentation.

4.1.2 WELDING PROCEDURES

The applicable welding procedures for the project will be determined by the Quality Control Supervisor. All welding procedures shall be submitted to the Client for review and approval before production welding may begin. Original copies of the required welding procedures can be obtained from the Quality Assurance Manager in Anchorage. No changes or revisions shall be made to any VECO welding procedures without prior approval from the Quality Assurance Manager.

4.1.3 WELDER QUALIFICATION

Welder qualification test records shall be submitted to the Client for review prior to production welding.

When submitting welder qualification papers that are dated past the 6 month expiration limit, it will be VECO'S responsibility to provide the Client with a welder continuity log or letter as proof that the welder(s) has been welding with the same p. within the required 6 month time period.

When proof of performance qualification can not be provided, welder qualification testing shall be performed as follows:

The Client shall be given notice and the option to witness all welder qualification testing whether performed by VECO, or a third party.

When prior permission is obtained from the Client, welder qualification testing will be administered by the VECO Quality Control department on site. The Client shall be given notice and the option to witness all testing.

Testing will be performed in conjunction with the applicable construction code and specifications.

Each qualified welder will be given an individual I.D. number and be responsible for stenciling his work with a paint marker.

A qualified welder roster will be maintained by the Quality Control department and updated each time there is a change in status. A copy of this roster will be distributed to the required Client representatives.

4.1.4 WELDING CONSUMABLES

Low hydrogen electrodes shall be stored in the unopened containers until issued for use. Once opened, consumables will be kept in rod ovens set at the temperature recommended by the manufacturer. If the rod manufacturer's recommendations are not available, SFA 5.1 and 5.5 of ASME Section II part C or AWS 5.1 and 5.5 of the AWS filler metal specification may be used as a guideline.

Portable rod cans and ovens shall be used when low hydrogen electrodes are used for field welding.

Drying of low hydrogen electrodes is allowed. The electrodes shall be placed in a rod oven used specifically for drying, not storage. The manufacturer's recommendations will be used for the drying time and temperature. If the manufacturer's recommendations are not available, SFA 5.1 and 5.5 of ASME Section II part C or AWS 5.1 and 5.5 of the AWS filler metal specifications may be used as a guideline.

Cellulose coated electrodes shall be stored in the unopened containers until issued for use. Once opened they shall be kept in an unheated dry location until used.

Low hydrogen and cellulose coated filler metal that come into contact with water, grease, or any substance that may contaminate the electrodes shall be discarded.

Bare wire shall be stored in the unopened containers until issued for use. All individual wires shall be tagged, marked or color coded on one end of the wire for easy identification.

Welding gases shall be marked or tagged so the type and composition can be easily determined.

4.1.5 WELDING INSPECTION

In-process welding inspection will be performed by the Quality Control department throughout the duration of welding activities. At a minimum,10% of each days welding shall be inspected for:

Fitups.

Preheat and interpass temperatures.

Line up clamp removal (Adequate bead installed before removal).

Cribbing and support.

Head spacing for socket welds (When Accessible).

Base material.

Approved welding procedures (Consumables, Travel Speed, Voltage, Amperage, Rod size, etc.).

Consumable storage.

All completed butt welds shall be 100% visually inspected to the requirements of the applicable construction code regardless of the NDE requirements. Welds shall be cleaned and free of slag and other residue that may impair visual inspection.

All socket and O'let welds shall be 100% visually inspected on the O.D. and, when access is available, the I.D. A boroscope may be used for internal inspection when access for visual inspection is restricted. Socket and O'let welds that do not receive an internal inspection shall be subject to nondestructive examination as required by the Client.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of the welding.

4.1.6 NONDESTRUCTIVE EXAMINATION

Nondestructive examination requests shall be filled out and submitted to VECO, or the Client NDE contractor, for the examinations required in the applicable code and specifications. It shall be the responsibility of the inspector who performs the visual inspection to sign off the visual acceptance on the NDE request and ensure the weld(s) is marked, flagged and has safe and adequate access for nondestructive examination.

4.1.7 WELD REPAIRS

Quality control will lay out the repair areas for each weld. The welding procedure used to make the original weld shall be used for the repair. The entire weld shall be preheated to the temperature required by the welding procedure prior to any repair welding. The original NDE method shall be used to verify that the repair weld is acceptable. The Client may elect to use another, or additional NDE methods to verify that the repair is completed satisfactorily.

4.1.8 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 4.1.9. Testing that is required by the contract, or specifications shall be documented on Client supplied forms.

4.1.9 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

Qualified Welder Roster.

VECO, INC.
STRUCTURAL STEEL WELDING
INSPECTION PROCEDURE

5.1 SCOPE

This procedure outlines the inspection activities and responsibilities when shop and/or field welding of structural steel is performed by VECO.

5.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

5.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of welding.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

5.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through the Quality Control department for review and weld mark numbering.

Issue drawing revisions to the Discipline Superintendent.

Monitor production welding to ensure compliance with approved procedures and job specifications.

5.1.1.3 DisciplineSuperintendent or designee shall:

Determine (with assistance from quality control) the type, quantity and personnel to be given welder qualification tests.

Schedule welder testing with the Quality Control department.

Request a copy of the approved welding procedures and qualified welders roster from the Quality Control department.

Monitor production welding to ensure compliance with approved procedures and job specifications.

Coordinate NDE with the Quality Control department.

5.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings.

Route all material requests containing filler metals, flux and welding gases through the Quality Control department for confirmation before purchase.

Store all unused welding consumables per the manufacturer's recommendations.

5.1.1.5 Quality Control department shall:

Approve and issue welding procedures.

Administer welder qualification testing.

Perform quality control inspections.

Maintain required quality control documentation.

5.1.2 WELDING PROCEDURES

The applicable welding procedures for the project will be determined by the Quality Control Supervisor. All welding procedures shall be submitted to the Client for review and approval before production welding may begin. Original copies of the required welding procedures can be obtained from the Quality Assurance Manager in Anchorage. No changes or revisions shall be made to any VECO welding procedures without prior approval from the Quality Assurance Manager.

5.1.3 WELDER QUALIFICATION

Welder qualification test records shall be submitted to the Client for review prior to production welding.

When submitting welder qualification papers that are dated past the 6 month expiration limit, it will be VECO'S responsibility to provide the Client with a welder continuity log or verification letter as proof that the welder(s) has been welding with the same process(es) within the required 6 month time period.

Where proof of performance qualification can not be provided, welder qualification testing shall be performed as follows:

The Client shall be given notice and the option to witness all welder qualification testing whether performed by VECO, or a third party.

When prior permission is obtained from the Client, welder qualification testing will be administered by the VECO Quality Control department on site. The Client shall be given notice and the option to witness all testing.

Testing will be performed in conjunction with the applicable construction code and specifications.

Each qualified welder will be given an individual I.D. number and be responsible for stenciling his work with a paint marker.

A qualified welder roster will be maintained by quality control and updated each time there is a change in status. A copy of this roster will be distributed to the required Client representatives.

5.1.4 WELDING CONSUMABLES

Low hydrogen electrodes shall be stored in the unopened containers until issued for use. Once opened, consumables will be kept in rod ovens set at the temperature recommended by the manufacturer. If the rod manufacturer's recommendations are not available, SFA 5.1 and 5.5 of ASME Section II part C or AWS 5.1 and 5.5 of the AWS filler metal specification may be used as a guideline.

Portable rod cans and ovens shall be used when low hydrogen electrodes are used for field welding.

Drying of low hydrogen electrodes is allowed. The electrodes shall be placed in a rod oven used specifically for drying, not storage. The manufacturer's recommendations will be used for the drying time and temperature. If the manufacturer's recommendations are not available, SFA 5.1 and 5.5 of ASME Section II or part C or AWS 5.1 and 5.5 of the AWS filler metal specifications may be used as a guideline.

Cellulose coated electrodes shall be stored in the unopened containers until issued for use. Once opened, they shall be kept in a dry location until used.

Low hydrogen and cellulose coated filler metals that come into contact with water, grease, or any substance that may contaminate the electrodes shall be discarded.

Bare wire shall be stored in the unopened containers until issued for use. All individual wires shall be tagged, marked or color coded on one end of the wire for easy identification.

Welding gases shall be marked or tagged so the type and composition can be easily determined.

5.1.5 WELDING INSPECTION

In-process welding inspection will be performed by the Quality Control department throughout the duration of welding activity. At a minimum,10% of each days welding shall be inspected for:

Full penetration weld fitups.

Preheat and interpass temperatures.

Base material.

Approved welding procedures.

Consumable storage.

100% of all completed full penetration and fillet welds shall be visually inspected to the requirements of the applicable construction code regardless of the NDE requirements.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of the welding.

5.1.6 NONDESTRUCTIVE EXAMINATION

Nondestructive examination requests shall be filled out and submitted to VECO, or the Client NDE contractor, for the examinations required in the applicable code and specifications. It shall be the responsibility of the inspector who performs the visual inspection to sign off the visual acceptance on the NDE request and ensure the weld(s) is marked, flagged and has adequate access for nondestructive examination.

5.1.7 WELD REPAIRS

Quality control will lay out the repair areas for each weld. The welding procedure used to make the original weld shall be used for the repair. The entire weld shall be preheated to the temperature required by the welding procedure prior to any repair welding. The original NDE method shall be used to verify that the repair weld is acceptable. The Client may elect to use another, or additional NDE methods to verify that the repair is completed satisfactorily.

5.1.8 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 5.1.9. Testing that is required by the contract, or specifications shall be documented on Client supplied forms.

5.1.9 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

Qualified Welder Roster.

VECO, INC.
POSTWELD HEAT TREATMENT
INSPECTION PROCEDURE

6.1 SCOPE

This procedure outlines the inspection activities and responsibilities when shop and field postweld heat treatment is performed by VECO.

6.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

6.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of PWHT.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

6.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through the Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Monitor PWHT to ensure compliance with approved procedures and job specifications.

6.1.1.3 Discipline Superintendent or designee shall:

Request a copy of the approved PWHT procedures from the Quality Control department.

Monitor PWHT activities to ensure compliance with approved procedures and job specifications.

Coordinate NDE (hardness testing) with the Quality Control department.

6.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

6.1.1.5 Quality Control department shall:

Perform quality control inspections.

Maintain required quality control documentation.

6.1.2 POSTWELD HEAT TREATMENT

This procedure is intended for stress relieving of carbon steel heated to below the lower transformation temperature. All other material and temperature ranges will require a separate procedure to be developed prior to use.

Upon acceptance of the Nondestructive examination results, the thermocouple nuts will be tacked at equal quadrants around the circumference of the pipe approximately 1" from the edge of the weld using a qualified welder and approved welding procedure. A spare thermocouple nut will be tacked next to each primary nut for a backup thermocouple.

The required number of thermocouples and heater pads to be used will be determined, from the manufacturers recommendations, by the wall thickness, diameter and orientation of the weld(s) to be postweld heat treated.

6.1.2 POSTWELD HEAT TREATMENT (Cont.)

A primary and secondary thermocouple will be connected to their respective nuts. Only the primary thermocouples will be connected to the controller at this time. The secondary set of thermocouples will be used only to replace any of the primary units that fail. All primary and secondary thermocouples shall be protected from their respective heater pads direct radiation by covering the thermocouple attachment nuts with insulating tape.

All primary and secondary thermocouple leads will be identified by a separate number tag. These numbers shall remain visible after the weld(s) is completely wrapped. All secondary units will be located next to their primary units for easy identification and access.

Once the primary thermocouples are connected to the appropriate controller terminals, the ceramic heating pads will be installed. Care shall be taken to ensure that the corresponding heater pad and its controlling thermocouple are placed together and connected to the same number terminal on the controller and power source. The number of heater pads shall be determined, from the manufacturers recommendations, by the wall thickness, diameter and orientation of the weld(s) to be postweld heat treated.

After placement of the heater pads is complete, the insulation blankets will be wrapped completely around the heater pads and sufficient pipe material to ensure uniform heating and cooling can be achieved.

The Client shall be notified before the start of the above mentioned activities, and also before the start of the postweld heat treatment operations, to provide the opportunity to witness any activities desired.

The controller shall be set on automatic using the following parameters for carbon steel weldments:

The heating rate from ambient to 800 degrees F. shall have no restriction; above 800 degrees F. the maximum heating rate shall be 400 degrees F. per hour.

Soak temperature shall be 1150 degrees F. plus or minus 25 degrees F.

Soak time shall be one hour per inch of wall thickness with a minimum of one hour for any thickness under one inch. The correct soak time for each weld will be made on a case-by-case basis, and subject to the approval of the Client.

6.1.2 POSTWELD HEAT TREATMENT (Cont.)

The maximum cooling rate from soak temperature to 800 degrees F shall be 500 degrees F. per hour. Below 800 degrees F. the cooling rate may be uncontrolled. However, the insulation blankets shall be left in place until the weld temperature has reached a minimum of 150 degrees F.

One trained craftsman shall remain at the controls of the equipment during the entire controlled heating and cooling cycle. If a problem occurs with any of the primary thermocouples, he will switch to the secondary thermocouple for that heater pad, this information shall be recorded on the strip chart for reference.

If the automatic controller fails during the stress relieving process, the craftsman will control the functions manually using the same parameters for heating, soak and cooling as outlined above.

The strip chart shall have the following areas marked with the time and date:

The start of heating.

At the 800 degrees F. mark for the heating slope, and every 15 minutes until the soak time is reached.

At the start of soak, and every 15 minutes until the end of soak has been reached.

At the start of the cooling slope, and every 15 minutes until 800 degrees F. is reached.

The Quality Control department shall witness, or monitor all postweld heat treatment activities as necessary to ensure compliance with this procedure and any additional requirements directed by the Client.

When the weld has cooled and the insulation blankets and heater pads have been removed, a two inch wide area at the weld cap will be ground flush with the base metal for hardness testing at the location(s) directed by Client.

All the thermocouple nuts shall be removed by grinding. Care shall be exercised so no damage to the base metal will occur.

6.1.3 DOCUMENTATION

Postweld heat treatment shall be documented on the forms listed in 6.1.4.

The postweld heat treatment report will be filled out and submitted, along with the recorder strip chart identified by weld number, line number and isometric number, to the Client for approval.

The approved postweld heat treatment report(s) and strip chart(s) will be incorporated into the final documentation package for turnover to the Client.

6.1.4 LIST OF FORMS IN APPENDIX 1

Postweld Heat Treatment Form.

7.1 SCOPE

This procedure outlines the inspection activities and responsibilities when structural steel is fabricated and erected by VECO.

7.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

7.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of fabrication and erection.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

7.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through the Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Perform field dimensional and material checks to verify fabrication and erection to the approved drawings and specifications.

7.1.1.3 Discipline Superintendent or designee shall:

Ensure the most current and approved drawings are used for fabrication and erection.

Monitor structural steel to ensure fabrication is being performed to the approved drawings and specifications.

7.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings.

7.1.1.5 Quality Control department shall:

Perform quality control inspections.

Maintain required quality control documentation.

7.1.2 QUALITY CONTROL INSPECTIONS

In-process inspection will be performed by the Quality Control department throughout the duration of structural steel activities. At a minimum,10% of each days work shall be inspected for:

Correct alignment of bolted connections.

Correct bolt and nut grade and type and length.

Installation of load indicating washers or the turn-of-the-nut method.

The manufacturer's recommendations shall be followed for the installation and use of load indicating washers. When the turn-of-the-nut method, or torquing is required, the procedure shall be as detailed in the AISC manual 9th ED.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of the structural activities.

7.1.3 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 7.1.4. Testing that is required by the contract, or specifications shall be documented on Client supplied forms.

7.1.4 LIST OF ATTACHMENTS

Inspection Report.

Inspection Log.

VECO, INC.
PIPE FABRICATION AND ERECTION INSPECTION PROCEDURE

8.1 SCOPE

This procedure outlines the inspection activities and responsibilities when piping is fabricated and erected by VECO.

8.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

8.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of fabrication and erection.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

8.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through the Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Perform field dimensional and material checks to verify fabrication and erection to the approved drawings and specifications.

8.1.1.3 Discipline Superintendent or designee shall:

Ensure the most current and approved drawings are used for fabrication and erection.

Monitor piping to ensure fabrication and erection is being performed to approved drawings and specifications.

8.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings.

8.1.1.5 Quality Control shall:

Perform quality control inspections.

Maintain required quality control documentation.

8.1.2 QUALITY CONTROL INSPECTIONS

In-process inspection will be performed by the Quality Control department throughout the duration of the fabrication and erection activities. As a minimum,10% of each days activity shall be inspected for:

Latest drawing revisions.

Correct material per drawings.

Square and plumb piping installation.

All bolted connections shall be performed in accordance with the applicable Client specifications. The Quality Control department will supply the Discipline Superintendent with copies of the required specifications for distribution to the field craftsmen. In-process inspection will be performed throughout the duration of bolt up activities. 100% of each days bolt-ups shall be inspected and documented by the Foreman and/or QC department for:

8.1.2 QUALITY CONTROL INSPECTIONS (Cont.)

Correct fit up, alignment and flange face condition.

Correct gasket type and installation.

Correct bolt and nut grade and type and length.

Correct application of required lubricants.

Correct numbering and torque sequence and values.

Calibrated torquing equipment.

A minimum 10% of the completed bolt-ups, and 100% of all completed bolt-ups that will not be hydrotested shall be verified and documented by the Quality Control department.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

8.1.3 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 8.1.4. Testing that is required by the contract, or specifications shall be documented on Client supplied forms. When required by Client specifications, additional documentation of bolt-up activities will be performed.

8.1.4 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

VECO, INC.
PRESSURE TESTING
INSPECTION PROCEDURE

9.1 SCOPE

This procedure outlines the inspection activities and responsibilities when hydrostatic and pneumatic testing is performed by VECO.

9.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

9.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of testing activities.

Establish test boundaries and the location of all blinds, spacers, vents, drains and disposition of test fluids.

Establish test fluid, duration and the minimum and maximum test pressure.

Define equipment and instrumentation to be included, or excluded from the test.

Issue drawing revisions to the Discipline Engineer.

9.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through the Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Perform field checks to verify the system is prepared as detailed by the Project Engineer.

Sign off mechanical checkout and ready for service on the Pressure Test Report.

9.1.1.3 Discipline Superintendent or designee shall:

Ensure the most current and approved drawings are used for system preparation and testing as detailed by the Project Engineer.

Sign off ready-for-test, and drained and ready for service on the Pressure Test Report.

9.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings.

9.1.1.5 Quality Control shall:

Perform quality control inspections.

Maintain required quality control documentation.

Sign off welding inspection on the Pressure Test Report.

9.1.2 HYDROSTATIC TESTING

The Quality Control department shall ensure preparation of the test as detailed by the Project Engineer, and verify all NDE and repairs have been completed. The Pressure Test Report shall be properly filled out and the test package will include the following items as determined by the type of test prior to releasing the hydrotest package for test:

The Pressure Test Report.

Piping isometrics, P&ID, or a sketch of the system showing the test boundaries, locations of blinds, spacers and any vents and/or drains.

Pressure gauge calibrations.

Any RFI'S, change orders or other documents that effect the system.

9.1.2 HYDROSTATIC TESTING (Cont.)

Pressure chart recorder calibration.

Temperature chart recorder calibration.

Dead weight tester calibration.

Hydrostatic test and temperature record.

Fill record.

9.1.3 PNEUMATIC TESTING

Pneumatic testing may be used as a preliminary leak test prior to hydrostatic testing, but shall not exceed applicable code requirements. When pneumatic testing is required by specification, or is determined to be the most practical system test, the following guidelines shall apply:

Snoop, or other acceptable solutions, shall be used to aid in leak detection.

The test package shall contain the required documentation as outlined in 9.1.2.

9.1.4 TEST EQUIPMENT

Test instrumentation shall be calibrated per the Clients specifications and shall be individually identified and tracked for usage. All test instrumentation is subject to recalibration if there is a reason to question their accuracy.

9.1.5 QUALITY CONTROL INSPECTIONS

Quality control shall witness all hydrostatic and pneumatic tests to ensure that they are conducted in accordance with the applicable code and Client specifications. On extended tests Q.C. will not be required to remain at the test location for the entire test duration, but rather monitor critical portions of the test as necessary. In-process inspection will be performed by the Quality Control department throughout the duration of the preparation and testing activities for:

9.1.5 QUALITY CONTROL INSPECTIONS (Cont.)

Correct system preparation.

The correct type, quantity and calibration of test instruments.

Ensure system pressurization in incremental steps to allow stress and strain to equalize.

Correct test pressure throughout the duration of the test.

Inspect system for leakage.

System draining, cleaning and disposition of test fluids.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

9.1.6 NOTIFICATION

Notification will be given to the Client at periodic stages of test preparation, and when practical, 24 hours prior to test pressurization.

9.1.7 TEST ACCEPTANCE

After acceptance of the test, the system will be drained and restored. Punchlists will be used to track incomplete items that did not effect the testing of the system until completion.

9.1.8 SAFETY

Because of the inherent dangers involved with hydrostatic and pneumatic testing, safety shall be the major concern. The following steps shall be minimum precautions when any system is under pressure:

Warning signs shall be posted at suitable location.

No attempt to repairs leaks shall be made while the system is under pressure.

9.1.8 SAFETY (Cont.)

High pressure test hoses shall be inspected by test personnel before use and shall be installed and routed to avoid possible tripping hazards.

Only personnel directly involved with the test shall be allowed in the area.

The Safety Engineer shall be notified of the time and location of all pressure tests.

9.1.9 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 9.1.10. Testing that is required by the contract, or specifications shall be documented on Client supplied forms.

9.1.10 LIST FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

Pressure Test Report.

VECO, INC.
GENERAL ELECTRICAL INSPECTION PROCEDURE

10.1 SCOPE

This procedure outlines the inspection activities and responsibilities when electrical construction is performed by VECO.

10.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

10.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of electrical construction activities.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

10.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through the Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Perform field dimensional and material checks to verify electrical construction is being performed to the approved drawings and specifications.

10.1.1.3 Discipline Superintendent or designee shall:

Ensure the most current and approved drawings are used for construction.

Monitor electrical construction to ensure installation is being performed to approved drawings, specifications and inspection procedures.

10.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings.

10.1.1.5 Quality Control department shall:

Perform quality control inspections.

Maintain required quality control documentation.

Coordinate QC/QA inspections with Client.

10.1.2 QUALITY CONTROL INSPECTIONS

Prior to commencing work on any project, each journeyman and trainee performing electrical construction activities will be required to present a current Alaska fitness card.

In-process electrical inspection will be performed by the Quality Control department throughout the duration of electrical activities. At a minimum, 30% of each days activities, and 100% of all testing shall be inspected or witnessed for:

Grounding.

Conduit and supports.

Cable trays and raceways.

Seal off fittings.

Wire and cable pulling.

Wire and cable terminations and tagging.

Continuity and equipment testing.

10.1.2 QUALITY CONTROL INSPECTIONS (Cont.)

Megger and Hy-pot testing.

Torque Values.

Polarity and Phase checks.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of instrument activities.

10.1.3 SAFETY

Because of the danger of working around energized equipment and/or electrical circuits the lock-out procedure detailed in the VECO Safety Manual shall be strictly adhered to, and all electrical tools and instrumentation shall be inspected prior to use.

10.1.4 NOTIFICATION

A minimum of 48 hours prior notification of hy-pot testing, 24 hours for megger testing, and 4 hours for all other tests shall be given to the Client.

10.1.5 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 10.1.6. Client supplied forms will be used for documentation of all electrical testing. VECO will submit any additional forms that become necessary, to the Client for review before use.

10.1.6 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

VECO, INC.
GENERAL INSTRUMENTATION
INSPECTION PROCEDURE

11.1 SCOPE

This procedure outlines the inspection activities and responsibilities when instrument installation is performed by VECO. The Project Engineer shall give special consideration to the requirements for fire and gas system installation and inspection. When applicable, additional inspection criteria outside the scope of this procedure will be established.

11.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

11.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of instrumentation activities.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

11.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through the Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Perform field dimensional and material checks to verify instrument installation is being performed to the approved drawings and specifications.

11.1.1.3 Discipline Superintendent or designee shall:

Ensure the most current and approved drawings are used for construction.

Monitor instrument installation to ensure installation is being performed to approved drawings, specifications and inspection procedures.

11.2.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings.

11.1.1.5 Quality Control department shall:

Perform quality control inspections.

Maintain required quality control documentation.

11.1.2 INSTRUMENT and TUBING INSTALLATION

The Discipline Superintendent shall ensure that all instrument and tubing installations are performed in accordance with the Clients specifications, good workmanship practices and:

Ensure that a depth measurement tool (DMT) is used for all tubing installations.

Gap measurement tools (Swagelok no-go gauges) are available for the craft.

Ensure all instruments are installed per the Clients specifications.

11.1.3 QUALITY CONTROL INSPECTIONS

In-process inspection will be performed by the Quality Control department throughout the duration of instrument installation. At a minimum, 30 % of each days activities, and 100% of all tube fitting assembly shall be inspected for:

Tubing material type, grade, size and wall thickness.

Use of approved sealants and Teflon tape.

Tubing cutting, deburring and bending.

Use of depth measurement tool.

Final gap inspection (using Swagelok no-go gauge).

Tubing support and routing.

Correct instruments installed per drawings.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of instrument activities.

11.1.4 NOTIFICATION

A minimum of 24 hours notification of tubing and instrument testing shall be given to the Client.

The required Instrument tests shall be performed as required by the Clients specifications, or instructions. Tubing test pressures and durations shall be performed per the Clients specifications, instructions and ASME B31.3.

11.1.5 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 11.1.6. Client supplied forms will be used for documentation of all instrument testing. VECO will submit any additional forms that become necessary, to the Client for review before use.

11.1.6 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

VECO, INC.
COATINGS
INSPECTION PROCEDURE

12.1 SCOPE

This procedure outlines the inspection activities and responsibilities when coatings are applied by VECO.

12.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

12.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of coating activities.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

12.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through the Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Perform field dimensional and material checks to verify coating activities are being performed to the approved drawings, specifications and manufacturer's recommendations.

12.1.1.3 Discipline Superintendent or designee shall:

Ensure the most current and approved drawings are used for coating activities.

Perform field dimensional and material checks to verify coating activities are being performed to the approved drawings, specifications and manufacturer's recommendations.

12.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of materials requested for approved drawings.

12.1.1.5 Quality Control department shall:

Perform quality control inspections.

Maintain required quality control documentation.

12.1.2 Handling and Storage

Extreme care shall be used in the handling and storage of coated products. Internally coated pipe spools are especially susceptible to damage, Client specifications shall be used to determine the handling and storage requirements.

12.1.3 QUALITY CONTROL INSPECTIONS

In-process coating inspection will be performed by the Quality Control department throughout the duration of coating activities. At a minimum, 10% of each days prime and top coating activities, and 100% of each days internal coating activities shall be inspected for:

Correct type coating system.

Coating system expiration dates.

12.1.3 QUALITY CONTROL INSPECTIONS (Cont.)

Surface preparation and profile.

Manufacturer's recommended environmental conditions and application techniques.

Dry film thickness between coats.

Curing times and temperatures.

Bake times and temperatures.

Dry film thickness and appearance for the final coat.

Holiday inspection.

Color comparison.

Client specifications shall determine the exact inspection requirements and test equipment.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of coating activities.

12.1.4 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 12.1.5.

12.1.5 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

Coating Inspection Form.

VECO, INC.
FIREPROOFING
INSPECTION PROCEDURE

13.1 SCOPE

This procedure outlines the inspection activities and responsibilities when fireproofing is applied by VECO.

13.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

13.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of fireproofing activities.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

13.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through the Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Perform field dimensional and material checks to verify fireproofing activities are being performed to the approved drawings, specifications and manufacturer's recommendations.

13.1.1.3 Discipline Superintendent or designee shall:

Ensure the most current and approved drawings are used for fireproofing activities.

Perform field dimensional and material checks to verify fireproofing activities are being performed to the approved drawings, specifications and manufacturer's recommendations.

13.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings.

13.1.1.5 Quality Control department shall:

Perform quality control inspections.

Maintain required quality control documentation.

13.1.2 QUALITY CONTROL INSPECTIONS

In-process fireproofing inspection will be performed by the quality control department throughout the duration of fireproofing activities. At a minimum, 10% of each days fireproofing shall be inspected for:

Correct fireproofing material.

Primed structural steel surface.

Metal lath is installed and secured properly.

Mixing procedures according to manufacturer's recommendations.

Application of material according to manufacturer's recommendations.

Curing time between coats according to manufacturer's recommendations.

13.1.2 QUALITY CONTROL INSPECTIONS (Cont.)

Hardness values according to manufacturer's recommendations.

Thickness values according to manufacturer's recommendations.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of fireproofing.

13.1.3 TESTING

The method for thickness testing may vary depending on the particular project circumstances, but will normally be performed using a 1/2" hole saw and a power drill. The removed sample shall meet the minimum and maximum thickness recommendations of the manufacturer and specification.

The manufacturer's recommendations and Client specifications shall be followed prior to top coating activities.

13.1.4 FIREPROOFING REPAIR

The manufacturer's recommendations for repair shall be followed. Additionally, the existing fireproofing in the repair area shall have a straight or back beveled surface area to provide an interlocking surface to tie into.

13.1.5 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 13.1.6.

13.1.6 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

Fireproofing Inspection Form.

VECO, INC.
INSULATION
INSPECTION PROCEDURE

14.1 SCOPE

This procedure outlines the inspection activities and responsibilities when preformed and situ insulation is performed by VECO.

14.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent, Material Coordinator and Quality Control department.

14.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of insulation activities.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Establish and maintain document control procedures.

Issue drawing revisions to the Discipline Engineer.

14.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through the Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Perform field dimensional and material checks to verify insulation activities are being performed to the approved drawings, specifications and manufacturer's recommendations.

14.1.1.3 Discipline Superintendent or designee shall:

Ensure the most current and approved drawings are used for insulation activities.

Perform field dimensional and material checks to verify insulation activities are being performed to the approved drawings, specifications and manufacturer's recommendations.

14.1.1.4 Material Coordinator or designee shall:

Ensure material is received and inspected as outlined in the Material Control section of the Quality Control Program.

Maintain required documentation as outlined in the Material Control section of the Quality Control Program.

Issue only the type and quantity of material requested for approved drawings

14.1.1.5 Quality Control department shall:

Perform quality control inspections.

Maintain required quality control documentation.

14.1.2 QUALITY CONTROL INSPECTIONS

In-process inspection will be performed by the Quality Control department throughout the duration of preformed insulation activities. At a minimum, 10% of each days activity and 100% of all completed insulation shall be inspected for:

Correct material.

Insulation fit shall be inspected prior to installation of the jacket.

Jacket seam overlap, required sealer and orientation.

Band spacing, location and tightness.

14.1.2 QUALITY CONTROL INSPECTIONS (Cont.)

In-process inspection will be performed by the Quality Control department throughout the duration of in situ insulation activities. At a minimum, 10% of each days activities and 100% of all completed insulation shall be inspected for:

Correct type system and expiration date.

Jacket seam overlap, required sealer and orientation.

Band spacing, location and tightness.

Surface and ambient temperatures.

Component A and B temperatures.

Hydraulic hose pressure and temperature.

Shot times.

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem area is developing in a general or specific area of the insulation activities.

14.1.3 IN SITU INSULATION

When in situ insulation is to be performed, test joints shall be used to develop a procedure with a set of variables that must be used in production. Qualification of the procedure may be done by a visual inspection only of the test joint when cut apart. When required by specification, mechanical testing will be performed to verify the acceptability of the procedure test. Variables that shall be recorded for each procedure are:

Surface and ambient temperatures.

Component A and B temperatures.

14.1.3 IN SITU INSULATION (Cont.)

Hydraulic hose pressure and temperature.

Shot times.

Extreme care must be taken to ensure that the components do not freeze. This is the responsibility of the Material Coordinator until the products are received by the Discipline Superintendent, at which time he assumes this responsibility.

14.1.4 TESTING

Visual testing will be performed by the Quality Control department on a minimum of one production joint daily. Mechanical testing when required by specification shall be performed under the direction of the Quality Control department, or third party agency.

14.1.5 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 14.1.6.

14.1.6 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

Insulation Inspection Form.

Procedure: 15.0	VECO, INC.	Date: 12/06/91
PAGE: 1 of 3	ARCHITECTURAL INSPECTION PROCEDURE	Revision No: 0

15.1 SCOPE

This procedure outlines the inspection activities and responsibilities when Architectural construction is performed by VECO.

15.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent and Quality Control department.

15.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to define project scope.

Establish priority of construction activities.

Review any design changes and material substitutions with the Client Engineer and obtain written concurrence.

Issue revised drawings to the Discipline Engineer.

15.1.1.2 Discipline Engineer or designee shall:

Route drawing revisions through Quality Control department for review.

Issue drawing revisions to the Discipline Superintendent.

Perform field dimensional and material checks to verify construction activities are performed to the approved drawings and specifications.

15.1.1.3 DisciplineSuperintendent or designee shall:

Ensure the most current and approved drawings are used for construction.

Ensure special construction procedures are available for review by field personnel.

Oversee all construction activities to ensure work is being performed to approved drawings and specifications.

15.1.1.4 Quality Control shall:

Maintain required documentation.

Perform quality control inspections.

15.1.2 QUALITY CONTROL INSPECTIONS

In-process inspection will be performed by the Quality Control department throughout the duration of architectural construction activities to ensure compliance with the contract drawings, specifications and applicable codes. At a minimum, 10% of each day's activity shall be inspected for:

Metal siding and roof installation.

Interior and exterior door installation.

Interior and exterior expansion joint installation.

Metal and wood stud installation.

Gypsum board and sheet rock installation.

Flashing and penetration installation.

Interior and exterior appurtenances.

Structural Steel (Per Sections 5.0 and 7.0).

Electrical and Instrumentation (Per Sections 10.0 and 11.0).

Painting (Per Section 12.0).

When inspection reveals unacceptable items, they will be entered into the Inspection Log for tracking if they can be brought back into compliance with the applicable contract documents, specifications or codes. When corrective action will not bring these items back into compliance, a Nonconformance Report shall be generated.

Inspection frequencies shall be increased when it is determined that a problem is developing in a general or specific area of the architectural construction activities.

15.1.3 TESTING

Any testing that is required by the contract documents shall be performed by qualified personnel, these can include the Project Engineer, Discipline Engineer, Quality Control department or a third party agency. The type and quantity of testing to be performed shall be as specified in the contract, specifications or on the approved drawings.

15.1.4 DOCUMENTATION

Inspections outlined in this procedure shall be documented daily on the forms listed in 15.1.5. Testing that is required by the contract, or specifications shall be documented on Client supplied forms.

15.1.5 LIST OF FORMS IN APPENDIX 1

Inspection Report.

Inspection Log.

VECO, INC.
FINAL SYSTEM WALKDOWN INSPECTION PROCEDURE

16.1 SCOPE

This procedure outlines the activities and responsibilities when performing final system walkdowns by VECO.

16.1.1 RESPONSIBILITIES

Implementation of this procedure requires the participation of the Project Engineer, Discipline Engineer, Discipline Superintendent and Quality Control department.

16.1.1.1 Project Engineer or designee shall:

Review the drawings and specifications to determine if punchlist items are in, or out of scope activities.

Establish priority for completion of punchlist activities.

Prepare incomplete work lists.

16.1.1.2 Discipline Engineer or designee shall:

Perform punchlist of completed systems.

Verify and sign off completed punchlist items.

16.1.1.3 Discipline Superintendent or designee shall:

Ensure systems are completed in accordance with the contract requirements, drawings and specifications.

16.1.1.4 Quality Control department shall:

Assist the Discipline Engineer with system walkdowns.

Verify and sign off completed punchlist items.

Maintain required quality control documentation.

16.1.2 WALKDOWN INSPECTIONS

The Discipline Superintendent shall notify the Discipline Engineer when any system(s) is complete and request an initial walkdown inspection. The Discipline Engineer, with assistance from the Quality Control department, shall walkdown the completed systems. Items that are incomplete, or are not installed correctly shall be written on a punchlist form.

The initial punchlist will be given to the Project Engineer for disposition. After the punchlist has been reviewed it shall be routed back to the Discipline Superintendent for correction of all outstanding items. The Discipline Superintendent shall be responsible for notifying the Quality Control department, and Discipline Engineer about the status of open items, and schedule a final walkdown inspection when they are completed.

The Client shall be given notice, and the option to participate in the final system walkdown. The Quality Control department or the Discipline Engineer shall verify and sign off completed punchlist items. The Client will also be requested to sign off these completed items. Items that cannot be completed prior to system turnover shall be transferred by the Project Engineer to the Client using an incomplete work list.

16.1.3 DOCUMENTATION

Punch list activities outlined in this procedure shall be documented on the forms listed in 16.1.4.

16.1.4 LIST OF FORMS IN APPENDIX 1

Punchlist Report.

Incomplete Work List.

APPENDIX 1

FORMS LIST

TITLE

COATING INSPECTION FORM

CONCRETE PREPOUR AND RELEASE FORM

ELECTRICAL INSPECTION FORM

FIREPROOFING INSPECTION FORM

INCOMPLETE WORK LIST

INSPECTION LOG

INSPECTION REPORT

INSPECTION REPORT (Continuation Sheet)

INSTRUMENTATION INSPECTION FORM

INSULATION INSPECTION FORM

MATERIAL INSPECTION LOG

NONCONFORMANCE REPORT

NONCONFORMANCE REPORT LOG

OVER SHORT OR DAMAGED REPORT

POSTWELD HEAT TREATMENT FORM

PRESSURE TEST REPORT

PUNCHLIST

QUALIFIED WELDER'S ROSTER

VSM SLURRY LOG

APPENDIX 2

QUALITY CONTROL MANUAL

REVISION LOG

APPENDIX 1

FORMS LIST

TITLE

COATING INSPECTION FORM

CONCRETE PREPOUR AND RELEASE FORM

ELECTRICAL INSPECTION FORM

FIREPROOFING INSPECTION FORM

INCOMPLETE WORK LIST

INSPECTION LOG

INSPECTION REPORT

INSPECTION REPORT (Continuation Sheet)

INSTRUMENTATION INSPECTION FORM

INSULATION INSPECTION FORM

MATERIAL INSPECTION LOG

NONCONFORMANCE REPORT

NONCONFORMANCE REPORT LOG

OVER SHORT OR DAMAGED REPORT

POSTWELD HEAT TREATMENT FORM

PRESSURETEST REPORT

PUNCHLIST

QUALIFIED WELDER'S ROSTER

VSM SLURRY LOG

VECO, INC.

COATING INSPECTION FORM

CONTRACT NO: _____ PAGE ____ OF ____

REFERENCE DRAWING (S) NO: _____

LOCATION : _____

ITEMS THAT ARE INSPECTED SHALL BE CHECKED ACCEPTABLE OR UNACCEPTABLE. IF AN ITEM IS CHECKED UNACCEPTABLE IT SHALL BE ENTERED INTO THE INSPECTION LOG, OR A NONCONFORMANCE GENERATED AS REQUIRED BY THE QUALITY CONTROL PROGRAM. ADDITIONAL INFORMATION AND INSPECTIONS MAY BE REQUIRED BY THE CONTRACT OR SPECIFICATIONS.

	ACCEPTABLE	UNACCEPTABLE
CORRECT TYPE OF COATING SYSTEM	☐	☐
COATING SYSTEM EXPIRATION DATES	☐	☐
SURFACE PREPARATION and PROFILE	☐	☐
APPLICATION TECHNIQUES	☐	☐
DRY FILM THICKNESS BETWEEN COATS *	☐	☐
CURING TIME and TEMPERATURES	☐	☐
BAKE TIME AND TEMPERATURES	☐	☐
DRY FILM THICKNESS FINAL COAT *	☐	☐
APPEARENCE FINAL COAT	☐	☐
HOLIDAY INSPECTION	☐	☐
COLOR COMPARISON	☐	☐

* DRY FILM THICKNESS READINGS

MINIMUM THICKNESS READINGS _____

MAXIMUM THICKNESS READINGS _____

AVERAGE THICKNESS READINGS _____

THICKNESS READINGS SHALL BE TAKEN AT FIVE LOCATIONS FOR EVERY 100 SQURE FEET OF COATING AREA INSPECTED. THREE INDIVIDUAL READINGS SHALL BE TAKEN AT EACH OF THE FIVE LOCATIONS.

ADDITIONAL TESTS OR INSPECTIONS _____

_____

_____

INSPECTED BY: _____ DATE _____

REVIEWED BY: _____ DATE _____

VECO, INC.

CONCRETE PREPOUR AND RELEASE FORM

CONTRACT NO. _____ SLUMP REQUESTED _____
DATE: _____ TEMPERATURE _____
AREA: _____ DESIGN MIX _____
PLACEMENT NO. _____ WARM WEATHER CONCRETE _____
FOUNDATION NO. _____ COLD WEATHER CONCRETE _____

DESCRIPTION	DISCIPILNE ENGINEER	DATE	Q.C. INSPECTOR	DATE
FORMWORK				
Location				
Elevation				
Clean and Oiled				
Chamfer or Grade Strip				
Blockouts and Keyway				
Adequate Bracing and Ties				
REBAR				
Size				
Splices				
Quantity				
Clearance				
Dowels				
EMBEDS				
Anchor Bolts-(Type)				
Anchor Bolt-(Location & Projection)				
Sleeves				
Pipe				
Plates				
Inserts				
Conduit				
Ground Wire				
CONSTRUCTION JOINTS				
Laitance Removal				
Water Stop				
General Clean Up				
Cold Weather Protection				

COMMENTS _____

_____

_____

_____

_____

_____

Reviewed By: _____ **DATE** _____

Accepted By: _____ **DATE** _____

VECO, INC.

ELECTRICAL INSPECTION FORM

CONTRACT NO: _____ PAGE ____ OF ____

REFERENCE DRAWING (S) NO: _____

LOCATION : _____

ITEMS THAT ARE INSPECTED SHALL BE CHECKED ACCEPTABLE OR UNACCEPTABLE. IF AN ITEM IS CHECKED UNACCEPTABLE IT SHALL BE ENTERED INTO THE INSPECTION LOG, OR A NONCONFORMANCE GENERATED AS REQUIRED BY THE QUALITY CONTROL PROGRAM. ADDITIONAL INFORMATION AND INSPECTIONS MAY BE REQUIRED BY THE CONTRACT OR SPECIFICATIONS.

	ACCEPTABLE	UNACCEPTABLE
GROUNDING	☐	☐
CONDUIT and SUPPORTS	☐	☐
CABLE TRAYS and RACEWAYS	☐	☐
SEAL OFF FITTINGS	☐	☐
WIRE PULLING	☐	☐
CABLE PULLING	☐	☐
WIRE and CABLE TAGGING	☐	☐
CONTINUITY TESTING *	☐	☐
HY-POT TESTING *	☐	☐
MEGGER TESTING *	☐	☐
POLARITY CHECKS *	☐	☐
PHASE CHECKS *	☐	☐

*** TEST RESULTS SHALL BE DOCUMENTED ON CLIENT SUPPLIED FORMS. WHEN TEST FORMS ARE TO BE SUPPLIED BY VECO THEY WILL BE SUBMITTED FOR REVIEW PRIOR TO THEIR USE.**

ADDITIONAL TESTS OR INSPECTIONS _____

_____

_____

_____

_____

INSPECTED BY: _____ DATE _____

REVIEWED BY: _____ DATE _____

VECO, INC.

FIREPROOFING INSPECTION FORM

ONTRACT NO: _____ PAGE ____ OF ____

REFERENCE DRAWING (S) NO: _____

LOCATION : _____

ITEMS THAT ARE INSPECTED SHALL BE CHECKED ACCEPTABLE OR UNACCEPTABLE. IF AN ITEM IS CHECKED UNACCEPTABLE IT SHALL BE ENTERED INTO THE INSPECTION LOG, OR A NONCONFORMANCE GENERATED AS REQUIRED BY THE QUALITY CONTROL PROGRAM. ADDITIONAL INFORMATION AND INSPECTIONS MAY BE REQUIRED BY THE CONTRACT OR SPECIFICATIONS.

	ACCEPTABLE	UNACCEPTABLE
CORRECT FIREPROOFING MATERIALS	☐	☐
PRIMED STRUCTURAL STEEL SUFACE	☐	☐
METAL LATH INSTALLED and SECURED	☐	☐
MIXING PROCEDURES	☐	☐
APPLICATION PROCEDURES	☐	☐
CURING TIME and TEMPERATURES	☐	☐
HARDNESS VALUES *	☐	☐
THICKNESS VALUES *	☐	☐
APPEARENCE FINAL COAT	☐	☐

* THICKNESS READINGS

MINIMUM THICKNESS READINGS _____

MAXIMUM THICKNESS READINGS _____

AVERAGE THICKNESS READINGS _____

HARDNESS READINGS _____

THICKNESS READINGS SHALL BE TAKEN AT ONE LOCATION FOR EVERY 100 SQUARE FEET OF FIREPROOFING INSTALLED. HARDNESS READINGS SHALL ONLY BE TAKEN WHEN REQUIRED BT THE SPECIFICATIONS.

ADDITIONAL TESTS OR INSPECTIONS _____

INSPECTED BY: _____ DATE _____

REVIEWED BY: _____ DATE _____

DATE : _____

VECO, INC.

CONTRACT NO: _____

INCOMPETE WORK LIST

PAGE _____OF _____

ITEM NO.	DISCRIPTION OF PROBLEM	PREPARED BY	RESOLUTION	DATE TRANSFERRED	WORK TO BE PERFORMED BY