

From: "Rick Keiper" <rick.keiper@chlsystems.com>
To: "Ray L. Kellar (E-mail)" <RLK2@nrc.gov>
Date: 08/30/2006 3:42:12 PM
Subject: CHL Qualified Welding Procedures and Pool Installation drawing

> Dear Ray,

>

> CHL Systems is an ISO 9001:2000 Certified company. We first received this certification in 2002 and have maintained it since then.

>

> As part of becoming ISO Certified, we have put in place many Quality Control Procedures. Part of these Quality Control Procedures control the procedures used when doing work on ASME Pressure Vessels. The controlling document for work on ASME Pressure Vessels is our ASME Quality Control Manual. I have included a copy of this manual. Section VIII, Welding Control, pages 14 and 15 deal specifically with how welders are qualified for ASME welding procedures, how and when these procedures are used, and how this is monitored.

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> Much of the work we do here at CHL Systems is on ASME Pressure Vessels which require ASME Pressure Vessel Stamps.

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> In order to meet the ASME requirements, all welding done on these vessels must be done only by individuals who are qualified for ASME welding procedures. For this reason, we have many welders who are qualified for a number of ASME welding procedures. The ASME procedures that we have welders qualified for are listed below.

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> ASME Welding Procedure	Description of Procedure
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> LW1	SMAW - Carbon Steel A106 to A106
> LW7	GTAW - Stainless Steel P8 to P8
> LW16	SMAW - Carbon Steel 6010 Root - 7018 Cap & Fill
> P8-1599	GTAW/GMAW - Stainless Steel TIG Root - MIG Cap & Fill
> P1-1730	SMAW - Carbon Steel 6010 Root - 7018 Cap & Fill
> P8-1778	FCAW - Stainless Steel P8 to P8
> P1-1796	FCAW - Carbon Steel P1 to P1
> P8-1922	GTAW - Stainless Steel P8 to P8
> P1P8-1900	FCAW - Carbon Steel P1 to Stainless Steel P8

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> In addition to ASME qualified welders, we also have welders that are qualified for AWS welding procedures. The AWS procedure that we have welders qualified for is listed below. In addition to this specific AWS procedure, many of our welders are qualified for the prequalified AWS welds under AWS D1.1.

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> AWS D1.1 Welding Procedure	Description of Procedure
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> P1-1797	FCAW - Carbon Steel to Carbon Steel
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ML062480089

> Since the irradiator pool is not a structural element of the irradiator building (in fact it is specifically isolated from the building), it is not required to be welded using AWS welding procedures. Also, since the irradiator pool is not a pressure vessel, it is not required to be welded using ASME welding procedures. However, the same people who are qualified for the ASME and AWS welding procedures are the people who do the welding on the irradiator pool. The welds used on the irradiator pool comply with both prequalified AWS welds and our ASME weld procedures.

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> Note: I have also included as an attachment the Pool Installation drawing you requested.

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> Rick Keiper

> Senior Engineer

> CHL Systems

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>

>

>

> > <<ASME Quality Control Manual.pdf>> > > <<POOLA-104-000-SHT1-REV04.pdf>> > > <<POOLA-104-000-SHT2-REV04.pdf>>

>

CC: "Kevin Landis" <kevin.landis@chlsystems.com>, "Russell Stein (E-mail)" <GrayStarNJ@aol.com>, "Rick Keiper" <rick.keiper@chlsystems.com>

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Creation Date 08/30/2006 3:38:12 PM
From: "Rick Keiper" <rick.keiper@chlsystems.com>

Created By: rick.keiper@chlsystems.com

Recipients

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Files	Size	Date & Time
MESSAGE	3555	08/30/2006 3:38:12 PM
ASME Quality Control Manual.pdf		1944456
POOLA-104-000-SHT1-REV04.pdf		697832
POOLA-104-000-SHT2-REV04.pdf		425124
Mime.822	4203680	

Options

Expiration Date: None
Priority: Standard
ReplyRequested: No
Return Notification: None

Concealed Subject: No
Security: Standard

Junk Mail Handling Evaluation Results

Message is eligible for Junk Mail handling
 This message was not classified as Junk Mail

Junk Mail settings when this message was delivered

Junk Mail handling disabled by User

Junk List is not enabled

Junk Mail using personal address books is not enabled

Block List is not enabled

The Genesis II Irradiator Pool Installation Instruction - POOLA-104-000, Rev. 4, Technical Data

**The information contained in this page has been removed because it contains
Sensitive Unclassified Non-Safeguards Information (SUNSI)
Category: Design of structure and/or equipment**

The Genesis II Irradiator Pool Installation Instruction - POOLA-104-000, Rev. 4, Drawing

**The information contained in this page has been removed because it contains
Sensitive Unclassified Non-Safeguards Information (SUNSI)
Category: Design of structure and/or equipment**



Quality Control Manual

For The Shop Fabrication
And
Field Assembly
Of Pressure Vessels
To ASME Code Section VIII Div.1
And
Shop & Field Repairs And Alterations To
Pressure Retaining Items
In Accordance With The National Board
Inspection Code And Jurisdictional Requirements

*Clayton H. Landis Company
476 Meetinghouse Road
Souderton, Pennsylvania 18964*

Controlled Manual Number:

ASME Code Manager

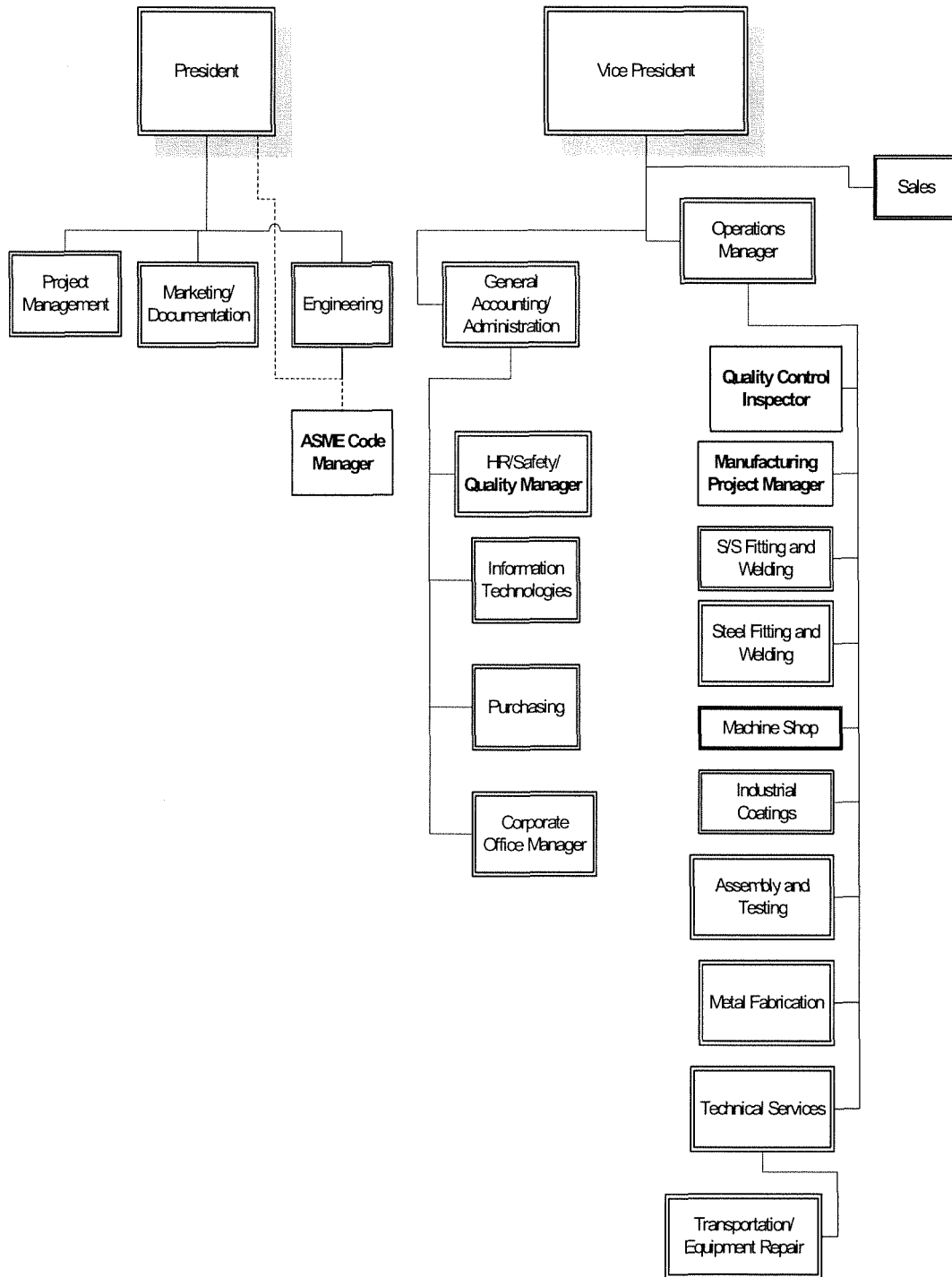
Date: _____

Authorized Inspector

Date: _____

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I. STATEMENT OF AUTHORITY

The management of Clayton H. Landis Company Inc. is totally committed to meet all of the requirements of the ASME BOILER and PRESSURE VESSEL CODE SECTIONS II, V, VIII, DIVISION 1 and IX, referred to in this manual as the code, as a minimum, and the Quality Control System outlined in this manual for the Shop Fabrication and Field Assembly of Pressure Vessels.

Shop and field repairs and alterations to pressure retaining items shall be performed in accordance with the requirements of the Jurisdictional Authority, The National Board Inspection Code, and this Quality Control Manual.

The ASME Code Manager shall be responsible for the preparation, revision, and distribution of the Quality Control Manual and for the administration and implementation of the Quality Control System in the shop and the field. He has the authority and organizational freedom to identify Quality Control problems, provide their solutions and verify resolution of the problems. Such measures shall include the authority to stop work when deemed necessary by the ASME Code Manager.

When disagreement between department heads occurs, the President of Clayton H. Landis Company Inc. shall preside over a resolution of the problem. Such resolutions shall be based on engineering judgment, without negating the requirements of the ASME Code, National Board Inspection Code, Jurisdictional Authority or this Quality Control Manual.

Signed: _____ Date: _____

James Daniel Landis, President

II QUALITY CONTROL RESPONSIBILITIES

- 1) It is the responsibility of the ASME Code Manager for the preparation, revision, distribution and implementation of the Quality Control Manual and controls of the same.
- 2) ASME Code Manager shall refer all proposed revisions to the Quality Control System to the Authorized Inspector for acceptance prior to inclusion or implementation.
- 3) ASME Code Manager will provide a current copy of the Quality Control Manual to the Authorized Inspector.
- 4) The Quality Control Manual shall be controlled by revision number. The entire manual shall be revised when a revision is made. Revision number shall be shown in the footer on each page and the actual revision highlighted. Revisions shall be approved by the ASME Code Manager and concurred with by the Authorized Inspector. Approval and concurrence are documented on the first page of the manual by signature and date of both.
- 5) The ASME Code Manager issues controlled copies of this Manual and its revisions to individuals recorded on the "List of Manual Holders" (Exhibit A-3) that he maintains. A current controlled copy of the Manual shall be issued to the Authorized Inspector for his use. Only controlled Manuals shall be issued to employees of the Company. Uncontrolled Manuals, not maintained current after the time of issue, may be issued to parties outside the Company. Manuals shall be identified on the cover page whether they are "Controlled" or "Uncontrolled". Controlled Manuals shall be numbered for identification and control purposes. Each Manual shall bear the same control number on its cover page as is shown on the List of Manual Holders.

The ASME Code Manager or designee shall hand carry the revised manuals to those individuals on the List of Manual Holders and retrieve and destroy the superseded manuals.

The ASME Code Manager shall perform a review of Editions & Addenda to the ASME Code and the National Board Inspection Code at the time of their issue, for changes that require revisions to this Manual. Revisions shall be made within six months of the Edition or Addenda issue date.
- 6) ASME Code Manager shall have control of code symbol stamps and control of their use.
- 7) It is the responsibility of the ASME Code Manager or designee to perform the required examinations and tests, and to signify the completion of the same. He will also sign and date the Process Sheet to show his acceptance of the described production functions.
- 8) ASME Code Manager directs and manages the preparation of reports and monitors the welder examinations.
- 9) ASME Code Manager will inform the Authorized Inspector of work progress and notify him of approaching inspection points or hold points designated by him.
- 10) ASME Code Manager is responsible for the effective implementation of the regulations described in this manual.
- 11) For field assembled projects, a memo will be issued delegating appropriate field site personnel to perform the functions required by this manual. A copy of the memo will be made available to the Authorized Inspector at the field site.
- 12) All Quality Control Manuals are controlled documents.

III REPAIRS AND ALTERATIONS

1) GENERAL

- a) Shop and Field repairs and alterations to pressure vessels when required by the owner, user, jurisdiction or AIA responsible for in-service inspection of the unit, are made in accordance with the applicable requirements of the jurisdiction, National Board Inspection Code (NBIC), A.S.M.E. Code and this Quality Control Manual.
- b) "REPAIR" is defined as the work to restore a pressure vessel to a safe and satisfactory operating condition, provided there is no deviation from the original construction.
- c) "ALTERATION" is defined as a change in any item described in the original A.S.M.E. Manufacturer's Data Report, which affects the pressure containing capability of a pressure vessel.
- d) "RE-RATING" a boiler or pressure vessel by increasing the maximum allowable working pressure or temperature is considered an alteration provided there is no physical change to the object. A reduction in minimum temperature for a pressure vessel, requiring additional mechanical tests, is also an alteration.

2) RESPONSIBILITY

The ASME Code Manager, or designee is responsible for the compliance with the Quality Control Manual for shop and field repairs and alterations to Code items.

3) PROCEDURE

- a) All repairs and alterations to Code pressure vessels are subject to the acceptance of the Authorized Inspector, who may require that evidence of acceptance of the method and extent of the repair or alteration by the jurisdiction or insurance carrier responsible for the in-service inspection be provided before starting work.
- b) The ASME Code Manager, or designee, prior to the start of work, provides the Authorized Inspector with drawings, calculations, procedures, Inspection Report Form, a copy of the original ASME. Manufacturer's Data Report for the item and any other documents necessary for the Authorized Inspector to accept the method of repair or alteration.
- c) For alterations, the ASME Code Manager, or designee will provide the Authorized Inspector with:
 - The form R-2 Report of Welded Alteration certifying that the design changes meet the NBIC and have been verified by the Authorized Inspector.
 - Revised calculations
 - For physical changes, Partial Data Reports for welded parts.

4) Routine Repairs

- a) Prior to performing routine repairs in accordance with paragraph RC-2031 of the NBIC, the ASME Code Manager, or designee determines the types of routine repairs permitted by the Jurisdiction where the work is performed and contacts the Authorized Inspector.

- b) The Authorized Inspector responsible for the repair, at his discretion, may accept repairs of a routine nature and give prior acceptance of the repair in accordance with the rules of the NBIC and the Jurisdiction.
- c) Subject to the administrative rules of the Jurisdiction and the acceptance of the Authorized Inspector, Stamping of Nameplates may not be required for routine repairs. However, this shall not preclude him from witnessing the final pressure test if he elects to do so. The Authorized Inspector shall sign the National Board Report Form. All other requirements of this Manual shall be followed when performing routine repairs.
- d) For alterations consisting only of re-rating, revised calculations shall be prepared in accordance with Section IV of this manual before being presented to the Authorized Inspector for review and acceptance.
- e) The ASME Code Manager, or designee, if requested by the Authorized Inspector, arranges for the access to make such inspections of the vessel he deems necessary in order to accept the method of repair or alteration.
- f) The ASME Code Manager, or designee or field Quality Control Inspector keeps the Authorized Inspector informed of the progress and completion of the work so he may make his designated inspections, and accept the repair or alteration after his final inspection of the completed work.
- g) All examinations, PWHT, and tests required by the Code for the original construction of the Pressure vessel are required for the repair or alteration, except that if impossible or impractical, alternative methods acceptable to the Authorized Inspector may be used.
- h) The pressure test shall be conducted as required by the Jurisdiction or the Authorized Inspector.

5) RECORDS

- a) The repair or alteration is documented on the current National Board Form R-1, Report of Repair or Form R-2, Report of Alteration when the Jurisdiction requires.
- b) When the work is complete, the applicable National Board Form is prepared and certified in ink by the ASME Code Manager, or designee.
- c) The final records, together with the completed Form R-1 or R-2 and any A.S.M.E. Manufacturer's Data reports, and for alterations the original A.S.M.E. Manufacturer's Data Report, are presented to the Authorized Inspector for his review. When he has satisfied himself that all NBIC, Code and Manual requirements have been met, he will authorize application of the "R" Symbol to the appropriate item and sign the Form R-1 or R-2.
- d) All records referenced in this section are available for review by the Authorized Inspector. The applicable "R" form is distributed as listed in below.

6) STAMPING

- a) If, during the repair or alteration of a pressure vessel, it is necessary to remove the original Manufacturer's ASME Code stamping or nameplate, the Authorized Inspector will, subject to the approval of the jurisdiction:
- b) Witness the making of a facsimile or rubbing of the old and new stamping.

- c) Witness obliteration or removal of the old stamping; and transfer of stamping to the new part or location on the item, less the original Code Symbol. The Code Symbol is NOT re-stamped.
- d) When the stamping is on a nameplate, the Authorized Inspector witnesses the transfer of the nameplate to its new location.

7) **PRESSURE TESTING:** Pressure testing of repaired or altered pressure retaining items shall be done in accordance with the NBIC part RC-2050 and RC-3030, and shall be held for a minimum of 10 minutes prior to examination by the Authorized Inspector.

8) When authorized and witnessed by the Authorized Inspector, the stamping of, or attachment of, a nameplate to the repaired or altered boiler and pressure vessel adjacent to the Original manufacturer's stamping or nameplate, shall comply with the NBIC.

9) When a new part is fabricated for inclusion in the repair or alteration, the requirements of this manual apply only to the Code stamping located on the new part, as required by the Code.

10) When authorized and witnessed by the Authorized Inspector, the stamping of, or attachment of a nameplate to, the required or altered vessel adjacent to the original Manufacturer's stamping or nameplate, shall comply with the NBIC and Exhibit A-10.

11) The ASME Code Manager, or designee retains custody and control of the "R" stamp as described in this manual. This symbol stamp is the property of the National Board.

12) DISTRIBUTION OF FORMS R-1 AND R-2

- a) Legible copies of the completed Form R-1, together with attachments, shall be distributed to the owner or user, the Inspector, the jurisdiction if required, and the Authorized Inspection Agency responsible for in-service inspection. Form R-1 may be registered with the National Board as noted in NBIC RC-10.
- b) Legible copies of the completed Form R-2, Report of Alteration, together with attachments, shall be distributed to "R" Certificate Holder performing the alteration, the Inspector, the Authorized Inspection Agency responsible for in-service inspection of the pressure retaining item, the owner or user, and the jurisdiction and to the National Board if so registered within 60 days of signing report.

13) The ASME Code Manager, or designee shall maintain a log of "R" repairs, "U" constructions and alterations, (Exhibit A-16) for National Board Report Forms that are registered with the National Board. The Form R and U Numbers shall be issued sequentially without skips or gaps, without suffixes or prefixes, starting with the number 1. The Logs shall record the Form Number, the applicable National Board Report Form (R-1, R-2, or U), the Owner/User's name and location, the date the work was completed and the date the Report Form was forwarded to the National Board.

IV DRAWINGS, DESIGN CALCULATIONS AND SPECIFICATIONS

- 1) Where supplied by the customer, the ASME Code Manager will review the customer's specifications and drawings to assure Code compliance can be obtained and proper manufacturing techniques can be applied.
- 2) ASME Code Manager will obtain design calculations or a review of customer's calculations from a qualified engineer.
- 3) ASME Code Manager will review all drawings and calculations with Authorized Inspector prior to start of fabrication so that he may designate his required inspection points on the Process Sheet (Exhibit A-1).
- 4) All drawings and bills of materials and material requisitions are approved by the ASME Code Manager.
- 5) The work order numbers are assigned and controlled by computer program when the work order is created.
- 6) Materials to be used in the Code related work are specified by ASME Code Manager in accordance with Section II - "Materials Specifications" - of the ASME Code. Materials are specified as SA or SB according to the allowable stresses listed in the ASME Code. Welding materials, specified by the ASME number, are traceable to the Welding Procedure Specifications. Materials must be permitted for use by Section VIII Division 1 or the Construction Code.
- 7) ASME Code Manager will distribute any drawings and all latest applicable revisions. ASME Code Manager will also dispose of any superseded drawings or controlling information.
- 8) Drawings issued for fabrication are attached to the Process Sheet being complete with all the provisions stated in the manual in accordance with the applicable ASME Code Section(s).
- 9) Drawings or Job Packages for ASME Code pressure vessels shall include the following information:
 - a) Code edition and addenda;
 - b) WPS;
 - c) NDE requirements;
 - d) Testing requirements;
 - e) Design parameters

V MATERIAL CONTROL

- 1) Materials shall be ordered to SA, SB or SFA material specifications, as permitted by the applicable Construction Code, using the information contained in the list of materials on the approved design drawings and material requisition.
- 2) Purchasing Manager is informed of materials to procure by a Material Requisition form (Exhibit A-4). The Material Requisition form will outline all the required material specifications in accordance with Section II of the ASME Code.
- 3) Purchasing Department personnel order materials by preparing a "Purchase Order" (Exhibit A-8). The Purchase Order shall contain the material specification and type or grade, quantity, special requirements (e.g. charpy impact tests, MDMT, UCS-79), marking requirements, certification requirements and the "Ordering Information" specified in the applicable material specification listed in ASME Code Section II (SA, SB or SFA).
- 4) Completed Purchase Orders shall be reviewed for correctness and Code compliance by Purchasing Manager; approval is shown by his dated initials or signature on the Purchase Order. The approved Purchase Orders shall be then placed with the vendor. Any substitution of materials from those materials required in the original approved design shall require the approval of the Engineer and the ASME Code Manager; and the acceptance of the Authorized Inspector.
- 5) Receiving Personnel, using the Receiving copy of the Purchase Order (Exhibit A-9), verify that the products meet the requirements specified on the purchase order, and verify material for marking, forming, dimensions, condition and quantity.
- 6) Receiving Personnel notify ASME Code Manager that the materials have been received as ordered.
- 7) The ASME Code Manager or designee shall review any required Material Test Reports for compliance to the requirements of the applicable material specifications in Section II. He also verifies the heat/lot number marked on the material is identical with that listed on the Material Test Report. His approval is shown by his dated initials on the Material Test Report. Quality personnel file one copy of the certs in the job folder and Purchasing files one copy.
- 8) The ASME Code Manager or designee documents his inspection on his copy of the MTR. If acceptable, He signs and dates the MTR.

9) Materials supplied by the Customer shall be received and inspected as described above and shall only be acceptable for use if the materials have the original material manufacturer's product markings as required by the applicable material specification. Customer supplied material that does not comply with the requirements of the Code or this Manual shall be considered nonconforming and handled in accordance with Section VII of this Manual.

Traceability requirements, mill test reports, etc. are traced through Purchase Order Number and Job Number by the Purchasing Department.

10) Purchase order numbers and heat numbers are clearly marked on all materials by the receiving personnel.

11) The Manufacturing Project Manager and Supervisors are responsible for ensuring the required identification markings are maintained on materials during all phases of fabrication. Materials shall be marked by methods that have been accepted by the Authorized Inspector.

Stamping shall not

be used on ferrous materials less than 1/4 thick or on nonferrous materials less than 1/2 thick.

Prior to cutting material into two or more pieces, the PO Number and Heat # shall be transferred to each piece.

12) Upon satisfactory completion of receiving inspection, documentation review, and trace code marking the ASME Code Manager, or designee, shall release accepted materials for fabrication.

13) Any material that does not meet Purchase Order or Code requirements shall be considered nonconforming and handled in accordance with Section VII of this Manual (Exhibit A-2).

14) Material Test Reports and Manufacturer's Data Reports shall be submitted to the Authorized Inspector for his review and acceptance.

Revisions to procurement documents shall be prepared, approved and distributed in the same manner as the originals.

The ASME Code Manager shall make all records referenced in this Section available for review by the Authorized Inspector.

VI EXAMINATION AND INSPECTION PROGRAM

- 1) ASME Code Manager provides a Process Sheet (Exhibit A-1) which describes important steps of construction and provides a sign off and date for those examinations performed by himself or his designee. A column is also provided on the Process Sheet for sign off and date for inspection performed by the Authorized Inspector.
- 2) A copy of the Process Sheet is provided to the Authorized Inspector prior to the start of production so that he may designate desired inspection points.
- 3) The ASME Code Manager shall notify the Authorized Inspector sufficiently in advance of his designated hold points. Work shall not progress beyond any Authorized Inspectors "Hold Points" until signed off by him denoting his acceptance of those operations. Additional hold points may be added by the Authorized Inspector, as he deems necessary. Completed Process Sheets are returned to the ASME Code Manager for his final review and maintained in the job file.
- 4) The Process Sheet will contain the proper Welding Procedure Specification and identify the welder(s) making the fabrication or repair.
- 5) When shop fabrication or field assembly of a Code item is completed, the Quality Control Inspector performs a final inspection and initials and dates the Process sheet when it meets Code and dimensional requirements. When a vessel is not provided with an opening or other means of access permitting entry to inspect internal surfaces, a hold point for the Quality Control Inspector and the Authorized Inspector shall be indicated on the Process Sheet to permit internal inspection before making the final closure weld or bolted joint. The Authorized Inspector may make his final inspection immediately following the pressure tests and initials and dates the Process Sheet when satisfied that the item meets Code requirements.
- 6) ASME Code Manager monitors final pressure tests and conducts final inspection of welded joints. Dial ranges of the gauges used will be graduated over a range of about double the intended maximum test pressure. In no case shall the range be less than 1-1/2 nor more than 4 times the intended maximum test pressure.
- 7) Code symbol stamps are held by the ASME Code Manager and shall only be applied upon concurrence of Authorized Inspector.
- 8) ASME Code Manager is responsible for the preparation of the ASME Manufacturer's Data Report and checks it for correctness and completion.
- 9) The ASME Code Manager, or designee is authorized to review and sign the Data Reports for the company prior to presenting to the Authorized Inspector for his signature.
- 10) ASME Code Manager will provide a copy of the Manufacturer's Data Report to the user or designated agent and, upon request, to the Authorized Inspector. The ASME Code Manager will keep the Report on file for a minimum of 5 years, along with any other relevant records.
- 11) ASME Code Manager is responsible for checking the correctness of nameplate data or stamping on the vessel.

VII CORRECTION OF NONCONFORMITIES

1) A nonconformity is a material, a product or a procedure that does not meet the requirements stated by the Purchase Order, Process Sheet, or this manual which controls that material, product or procedure. Non-conformities generally fall into one of three different categories: those that appear in receiving materials inspection, those that appear during fabrication and final testing, and those deviations from the procedures defined in this manual. Any defective materials or parts found during receiving inspection are reported to the Purchasing Manager and ASME Code Manager. The ASME Code Manager is responsible for resolution and disposition of any non-conformities detected during fabrication and final testing. (See Corrective Action Procedure Section XIV.)

2) ASME Code Manager is responsible for assigning the Welding Procedure Specifications for Welded Repairs. Repair of non-conformities by welding or use-as-is non-conformities require Authorized Inspector concurrence.

3) Receiving defects are returned to their manufacturer for repair or replacement to achieve ASME Code compliance. Non-conformities found during fabrication and final testing are repaired immediately under the authority of the ASME Code Manager in consultation with Authorized Inspector for any questions concerning the proper resolution of a nonconformity.

4) The Authorized Inspector shall be consulted for all process non-conformities that will require a revision to the Process Sheet. Nonconforming items must be marked "HOLD" with a tag (EXHIBIT A-14) by the ASME Code Manager. Non-conformity "HOLD" tags may be removed by the ASME Code Manager ONLY.

It is the duty of all employees to report non-conformities to the ASME Code Manager. The ASME Code Manager shall verify the non-conforming condition, prepare a "Non-conformity Report" (EXHIBIT A-2) list the Non-conformity Report Number on the Process Sheet and identify the item as non-conforming by marking "HOLD" on the item using the "HOLD" tag. The ASME Code Manager shall inspect the item after completion of the approved disposition. When he is assured the non-conforming condition has been corrected, including the Authorized Inspector's acceptance of any designated hold points, he shall sign-off the Non-conformity Report.

The Non-conformity Report together with any associated documents shall be reviewed by the ASME Code Manager and the Authorized Inspector and if acceptable they shall sign-off the Non-conformity Report, indicating close-out of the nonconforming condition. The ASME Code Manager shall then remove the Hold Tag.

5) In-process or final inspection non-conformities are fully described on a Nonconformance Report (Exhibit A-2), along with a complete outline of the proposed resolution. The Nonconformance Report will state all effects the nonconformity will have on all items and it must be dated and signed by the ASME Code Manager and Authorized Inspector (when consulted). Complete copies of the report must be attached to the previously issued Process Sheet prior to continuing work on the item or area containing the nonconformity.

VIII WELDING CONTROL

- 1) Welding shall be performed using Welding Procedure Specifications (WPS) and Welders qualified in accordance with ASME Section IX and the applicable ASME Code Section used for fabrication.
- 2) Welding Procedure Specifications and any subsequent revisions shall be prepared by the ASME Code Manager. The welding procedure qualification test coupons shall be made under supervision of the Manufacturing Project Manager. The preparation and testing of the weld test coupons shall be performed to ASME Section IX rules by a qualified testing laboratory.
- 3) Test reports submitted by the testing laboratory shall be reviewed by the ASME Code Manager and if acceptable he prepares and certifies by signature and date the Weld Procedure Qualification Record (PQR) which shall document all the actual variables used in making the qualification test welds. Original copies of the WPS, PQR and laboratory test reports shall be maintained by the ASME Code Manager and shall provide copies of qualified WPSs to the Manufacturing Project Manager for use by the welders.
- 4) The Manufacturing Project Manager shall be responsible for instructing the welders as to the proper use of the welding procedure. The welding procedure to be used during fabrication shall be listed on the Process Sheet by the ASME Code Manager.
- 5) WPS shall be revised when there is a change to any of the information/variables listed on the procedure and shall be re-qualified when there is a change to an essential or supplemental essential variable.
- 6) WPSs and PQRs shall be submitted to the Authorized Inspector for his review and acceptance. The Authorized Inspector has the right to request re-qualification of a welding procedure when there is reason to doubt its adequacy.
- 7) Welders shall be under the direction of the Manufacturing Project Manager, who supervises the welding of the welder's qualification test coupons. The preparation and testing of the test coupons shall be performed by a qualified testing laboratory.
- 8) The test reports provided by the testing laboratory shall be reviewed by the ASME Code Manager and, if acceptable, he prepares and certifies by signature and date the Record of Welder Performance Qualification Record (WPQ).
- 9) The ASME Code Manager maintains the WPQs on file and provides a copy to the Manufacturing Project Manager for use in the selection of welders and submits them to the Authorized Inspector for his review and acceptance.
- 10) The performance qualification of a welder shall be affected when one of the following conditions occurs:
 - A) A change to a performance essential variable.
 - B) When he has not welded with a process during a period of six months or more, his qualifications for that process shall expire.
 - C) The ASME Code Manager or Authorized Inspector have reason to question their ability to make welds that meet the specifications.
- 11) Each qualified welder shall be listed on a Welding Process(es) Log (Exhibit A-15) is maintained by the ASME Code Manager. The form shall be updated monthly and indicates; the date, the weld procedure used and the corresponding job number, for each process for which

the welder is qualified. The ASME Code Manager determines from the record when a welder's qualifications will expire, so as to ensure the individual performs production welding or is re-qualified.

12) The Manufacturing Project Manager shall be responsible for reviewing WPQs to verify that welders are qualified for the WPS they are to use, as listed on the Process Sheet, prior to welding on a Code item.

13) The ASME Code Manager shall issue each welder a unique identification symbol, which shall be used to identify each weld he makes. The ASME Code Manager shall be responsible for entering the welder's symbol on the Process Sheet for each joint the welder makes. Welder symbols shall be retired after the welder terminates employment. The welder's symbol may be reassigned upon the welders rehire.

14) Tack welds whether left in place or completely removed shall be made by qualified welders using the qualified WPS listed on the Process Sheet. If left in place the ends of each tack weld shall be ground to ensure complete fusion into the final weld. After preparation each tack weld shall be visually examined by the ASME Code Manager, and if cracked or otherwise defective, shall be removed.

15) Welding materials shall be purchased and received as described in Section V of this Manual. Welding materials shall be stored in their original containers in a dry storage area designated for the purpose and shall be issued to the work areas by the Manufacturing Project Manager.

16) Low hydrogen electrodes shall be received and stored in sealed containers. When the containers are opened, the electrodes shall be placed in a heated oven maintained at the temperature recommended by the electrode manufacturer or by ASME Section II Part C, as verified by the ASME Code Manager, prior to being issued to welders. Low hydrogen electrodes shall be issued only in a quantity sufficient to complete the weld, or for a four-hour period, whichever is less. When issued in heated portable ovens the period shall be extended to eight hours.

17) Unconsumed coated electrodes shall be examined by the ASME Code Manager upon return for condition, cleanliness and identification and placed in a segregated area of the oven prior to their reissue. Damaged, unidentified or partially consumed electrodes shall be scrapped.

18) The ASME Code Manager shall make all records referenced in this Section available for review by the Authorized inspector.

IX NONDESTRUCTIVE EXAMINATION

General

Nondestructive examination (NDE) shall be performed using Procedures and Personnel qualified in accordance with the applicable ASME Code Section used for fabrication.

The ASME Code Manager shall be responsible for determining the requirements for NDE and for specifying on the Traveler the required examinations. NDE shall be performed by a subcontractor whose Written Practice, Procedures and Personnel Qualifications have been reviewed and approved by the Quality Control Manager.

NDE Personnel

The ASME Code Manager, or designee shall have verified, prior to the start of NDE activities, that the personnel (Level I, II & III Examiners) engaged in these activities, have current certifications. Examiners shall be qualified and certified in accordance with their employer's Written Practice, which must comply with the requirements of the latest Code accepted edition of SNT-TC-1A.

The ASME Code Manager shall appoint by letter the subcontractor's Level III Examiner, for CHL. The letter shall state the specific methods he is qualified for, and be maintained on file by the QM.

The ASME Code Manager shall maintain copies of personnel qualification records on file and submit them to the Authorized Inspector for his review and acceptance.

The Authorized Inspector has the right to request re-qualification of an Examiner if he has reason to question the Examiner's ability to perform the examination.

NDE Procedures

NDE shall be performed using written procedures that have been approved by the company appointed Level III Examiner qualified in the specific method. The procedures shall provide enough detail as to the techniques to be used, to assure that ASME Code Section V and construction Code requirements are met. NDE procedures shall be reviewed and approved by the ASME Code Manager, and maintained on file by him.

NDE procedures shall be submitted to the Authorized Inspector for his acceptance and shall be proven by actual demonstration to the satisfaction of the Authorized Inspector prior to their use. The Authorized Inspector has the right to request re-qualification of any NDE procedure when he has reason to question its capability of producing meaningful results.

Revisions to procedures shall be prepared, approved and accepted like the originals.

NDE Reports

NDE reports, including radiographic film shall be evaluated, interpreted and accepted by a Level II or III Examiner and shall be reviewed and approved by the ASME Code Manager prior to submittal to the Authorized Inspector for his acceptance.

All NDE Reports, including radiographic film shall be maintained in the job file by the ASME Code Manager and retained as described in Section 12 of this Manual.

Records

The ASME Code Manager shall make all records referenced in this Section available for review by the Authorized Inspector.

X HEAT TREATMENT

Due to the limitation on thickness of materials used in Code fabrication, no heat treatment is required or used. If required, it will be subcontracted, and approved procedures will be furnished to the vendor. Time-temperature charts or chronological temperature lists will be required, and these will be reviewed by the ASME Code Manager for conformance with the written procedure and Code requirements. The charts and written procedures shall be available to the Authorized Inspector for review and acceptance.

XI CALIBRATION

Purpose:

The purpose of these requirements is to establish and maintain a calibration program to control the accuracy of all measuring and testing equipment used in the repair and fabrication of products that comply with the applicable National Board Inspection Code and/or ASME Boiler and Pressure Vessel Code.

Responsibility:

The Calibration Technician is responsible for the initiation of written calibration procedures that as a minimum will specify the following:

1. Identification number and description
2. The tolerances of the instrument being calibrated
3. Records including all dates
4. Calibration source
5. Calibration interval

Equipment Under the Calibration Program

1. Scales
2. Pressure gages
3. Temperature gages
4. Metal hardness tester
5. Metal thickness tester
6. Personal tools if used in Code work

Procedure:

The calibration procedures and records shall be maintained by the Calibration Technician. The managers of each department are responsible for the care and handling of measuring and testing equipment in their departments.

All equipment shall be assigned a calibration record number. Calibration Procedures shall be used for calibration of all measuring and test equipment. Records shall be maintained by the Calibration Technician and shall include an individual calibration record for each item of equipment. The calibration record must provide the equipment name, serial number, standards used, date calibrated, calibration interval, and date due for calibration and calibration results of

out of tolerance conditions. An individual data sheet shall be completed at each calibration and a data file shall be maintained by the Calibration Technician. These records shall be available for review by any authorized customer and/or Authorized Inspector upon request. All equipment shall be labeled to indicate the date of the last calibration and when the next calibration is due (Exhibit A-12). The ASME Code Manager will determine periodic calibration intervals based on the purpose and degree of usage in accordance with the applicable Code section or division. Equipment found out of calibration shall be removed from the work area and tagged "NOT CALIBRATED - DO NOT USE", by the ASME Code Manager, and shall be re-calibrated or replaced. Items checked with equipment that is found to be out of calibration shall be considered nonconforming and handled in accordance with SECTION VII of this manual.

Calibration Sources:

Calibration of equipment shall be done in house or by a commercial facility using standards whose calibration is certified as being traceable to the National Institute of Standards and Technology or other industrially accepted standards. Standards requiring calibration by a higher level Standard Laboratory, shall be calibrated by a commercial facility capable of providing the required service. All standards used in the calibration system shall be supported by certificates, reports, and/or data sheets attesting to the date, accuracy and environmental or other conditions under which the results furnished were obtained.

Storage and Handling:

All equipment shall be handled and stored in a manner, which shall not adversely affect the calibration or condition of the equipment.

XII RECORDS RETENTION

- 1) Records and information pertaining to completed repairs are kept on file by ASME Code Manager for a minimum of five years.
- 2) The Manufacturer's Data Report and all records and information pertaining to the completed fabrication are kept on file by the ASME Code Manager for a minimum of five years, except for the Mill Test Reports which are filed with the attendant Purchase Order in the Purchasing Department.
- 3) Copies of the repair report are distributed to the owner and Authorized Inspector.
- 4) All records generated during fabrication and/or repair will be made available to the Authorized Inspector during the fabrication or repair phase and at the time he signs the ASME Manufacturer's Data Report (U-1 Report), or the ASME Repair Report (R-1 Report), upon completion of the vessel, part, or repair that will be Code symbol stamped.
- 5) National Board serial numbers shall be controlled and issued by the ASME Code Manager. The numbers shall be issued sequentially without skips, gaps, suffixes or prefixes. The ASME Code Manager shall maintain a record showing the National Board Number, date issued, and manufacturer's serial number and date requested. The ASME Code Manager shall submit the original and one legible copy of all ASME Manufacturer's Data Reports to the National Board within forty-five days of signing the original. The vessel shall be stamped as indicated in the typical stamping (Exhibit A-11).
- 6) All records generated during fabrication or repair shall be placed in the job file folder for that particular job & become a part of the job record files.

XIII AUTHORIZED INSPECTOR

- 1) The Authorized Inspector is an employee of an ASME accredited Authorized Inspection Agency with which Clayton H. Landis Company, Inc. has a contract or agreement to supply inspection services required by the applicable Code section(s).
- 2) The ASME Code Manager is the prime contact with the Authorized Inspector at the plant or field assembly site and will apprise him of work progress and notify him sufficiently in advance of approaching inspection points as designated by the Authorized Inspector on the Process Sheet.
- 3) This Quality Control Manual hereby grants the right of Authorized Inspector to have free access to all parts of the plant and to all documentation related to Code work.
- 4) A complete Quality Control Manual is provided and maintained for his use.
- 5) Any nonconformities found in Code fabrication involving pressure retaining surfaces concurrence, are referred to the Authorized Inspector.
- 6) All repairs to material made by welding are referred to him prior to performing such repairs.
- 7) The access granted in (3) shall also apply to the Authorized Inspector's Supervisor in order to perform periodic audits of the manufacturer's system and performance of the Authorized Inspector as required by National Board Bylaws. When in need of additional help, the Authorized Inspector may also request aid of his Supervisor at the plant or field site.

XIV CORRECTIVE ACTION PROCEDURE (INTERNAL)

Purpose:

The purpose of this section is to establish the method of advising the responsible management personnel and the company's suppliers of any deviations from specifications. This procedure shall also establish a method of requesting corrective action to eliminate possible recurrences.

Methods:

Discrepancies found during repair or fabrication shall be called to the attention of the ASME Code Manager, who shall in turn request corrective action from the Manufacturing Project Manager. This request will be verbal. However, if the discrepancy is continuously repeated, the request for corrective action shall be documented on the Corrective Action Report (Exhibit A-6). Suppliers or subcontractors shall be notified by the Purchasing Manager of any deviations in supplied material and request, by means of the Corrective Action Report, what action has been taken to preclude further recurrence of the discrepancies, as well as the nature and effectiveness of the action taken. The ASME Code Manager shall review the file for supplier response. Delinquent or unacceptable response shall be brought to the Purchasing Manager's attention for resubmission.

Records:

Replies to the Corrective Action Report shall be kept on file with the records pertaining to that job, by the ASME Code Manager.

XV TRAILER OPERATIONS

Introduction

Clayton H. Landis Company, Inc. repairs, alters and fabricates parts for cargo tanks to the requirements of the Department of Transportation (49 CFR 170 thru 180); the American Society of Mechanical Engineers; Boiler and Pressure Vessel Code, Sections VIII, Division 1; and the National Board Inspection Code.

To fulfill the requirements of 49 CFR 107 in regard to registration and qualification as a repair facility for specification cargo tanks, Clayton H. Landis Company, Inc. has obtained the American Society of Mechanical Engineers "U" Certificate of Authorization and the National Board of Boiler and Pressure Vessel Inspectors "R" Certificate of Authorization. The provisions of this manual are applicable to all repairs, modifications/alterations and fabrication of parts for specification cargo tanks. Any repair or modification/alterations of a cargo tank involving welding on the head or shell must be certified by a Registered Inspector. Any repair or modification of an ASME "U" stamped cargo tank must be certified by an Authorized Inspector. Cargo tanks which are required to be ASME Code "U" stamped are as follows:

MC300, MC301, MC302, MC303, MC305, and MC306 are not required to be ASME Code "U" stamped.

MC307 are required to be ASME Code "U" stamped if they are designed for greater than 35 PSI.

MC310, MC311, and MC312 are required to be ASME Code "U" stamped if they are ASME Code "U" stamped for greater than 3 psig.

MC331 and MC338 are all required to be ASME Code "U" stamped.

MC406 are required to be fabricated by an ASME "U" Certificate of Authorization holder, but are not required to be stamped with the "U" symbol.

MC407 are required to be fabricated by an ASME "U" Certificate of Authorization holder, but are only required to be stamped with the "U" symbol if they are designed for greater than 35 psig or are loaded or unloaded by vacuum.

MC412 are required to be fabricated by an ASME "U" Certificate of Authorization holder, but are only required to be stamped with the "U" symbol if they are designed for greater than 3 psig or are loaded or unloaded by vacuum.

Tank trailer inspections, other than those to meet the requirements of ASME or National Board must be completed by an inspector who is individually or as an employee of a company registered with the Department of Transportation. For cargo tanks, which are not stamped with the ASME "U" symbol the required inspections may be made by either an Authorized Inspector or a Registered Inspector to meet the requirements of the regulations.

Trailer Operations Glossary

Alteration—A change in any item described in the original Manufacturer's Data Report which affects the pressure containing capability of a cargo tank. Re-rating a cargo tank by increasing the maximum allowable working pressure or temperature shall be considered an alteration. An alteration shall also be considered to include all modifications as defined in this section (Trailer Operations) and 49 CFR 180.403.

Cargo Tanks—A tank trailer or tank truck used to transport materials, which are designated by the Secretary of Transportation as capable of posing an unreasonable risk to health, safety or property or are controlled by EPA regulations as "Hazardous Waste." The scope of 49 CFR regulations includes tank trailers and tank trucks used by interstate, foreign and intrastate carriers who transport hazardous materials or hazardous waste.

Code of Federal Regulations—A collection of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government. 49 CFR parts 170 thru 180 provide the requirements for cargo tanks.

Jurisdiction -or- Jurisdictional Authority—For cargo tanks the Office of Hazardous Materials Transportation, Research and Special Programs Administration, Department of Transportation is the Jurisdictional Authority, except when more stringent regulations are imposed by a State of the United States.

Jurisdictional Requirements—The lawful requirements of a jurisdiction regarding cargo tanks (49 CFR 170-180 and state regulations).

Rebarrelling—Replacing more than fifty (50%) percent of the combined shell and head material of a cargo tank.

Stretching--Any change in length, width or diameter of the cargo tank, or any change to a cargo tank motor vehicle's undercarriage that may affect the cargo tank's structural integrity, for example, lengthening the wheelbase of the cargo tank motor vehicle.

Repairs and Alterations

Repairs and alterations shall be conducted in accordance with the Cargo Tank Specification, ASME Code and National Board Inspection Code specified in 49 CFR 171.7 as applicable to the repair or alteration. Cargo tanks must be repaired in accordance with the specification requirements in effect at the time of manufacture or at the time of repair. Alteration, modification, stretching, or re-barreling shall conform to the requirements for new construction. For Code items not under Department of Transportation regulations, the jurisdictional requirements, ASME Code and National Board Inspection Code shall provide the requirements

for repair and alteration. The Code edition and addenda used for original construction may be used as a basis for repairs or alterations when it becomes necessary due to design considerations.

Special Requirements

1) The ASME Code Manager will assure that the facility is properly registered with the Approvals Branch, Office of Hazardous Material Transportation, Department of Transportation, for the scope of work intended to be performed. A registration number must be obtained and that number indicated on all repair or alteration certifications.

2) **DESIGN CERTIFYING ENGINEER**

2.1 For all cases where "ENGINEER" is referenced in this section, it shall be required that the individual performing the function is a Design Certifying Engineer and he will include his or his company's registration number on any design documents he provides.

2.2 The Design Certifying Engineer is an Authorized Inspector with an engineering degree and who has knowledge and ability to determine if a cargo tank design meets the applicable DOT specification or a person other than an Authorized Inspector who has this knowledge and ability, at least one year of work experience in structural or mechanical design, and an engineering degree.

3) **REGISTERED INSPECTOR**

3.1 May be an Authorized Inspector who is registered with the Department of Transportation as a Registered Inspector or who is employed by a registered company and has been designated to perform inspections in accordance with the DOT regulations.

3.2 Clayton H. Landis Company, Inc. may qualify Registered Inspectors in accordance with the following:

3.2.1 The candidate must have one of the following work experience and education qualifications:

3.2.1.1 One year work experience and an engineering degree, or

3.2.1.2 Two years work experience and an associate degree in engineering, or

3.2.1.3 Three years work experience and a high school diploma

3.2.2 The candidate must demonstrate to the satisfaction of the ASME Code Manager his knowledge and ability to determine if a cargo tank conforms to the applicable DOT specification.

3.2.3 The ASME Code Manager will document the candidate's qualifications, listing the candidate's education, work experience, and satisfactory demonstration of knowledge and ability.

3.3 The Registered Inspector may perform the duties assigned to the Authorized Inspector in this manual for repairs and modifications to specification cargo tanks, which are not stamped with the ASME "U" symbol.

Index of Exhibits – Sample Forms

Exhibit A-1 – Process Sheet of Welded Repairs, Alterations & Fabrications

Exhibit A-2 – Nonconformance Report

Exhibit A-3 – List of Manual Holders

Exhibit A-4 – Material Requisition

Exhibit A-5 – Deleted

Exhibit A-6 – Corrective Action Report

Exhibit A-7 – Deleted

Exhibit A-8 – Purchase Order Sample

Exhibit A-9 – Receiving Form Sample

Exhibit A-10 – Stamping/Nameplate “R”

Exhibit A-11 – Stamping/Nameplate “U”

Exhibit A-12 – Calibration Label

Exhibit A-13 – Deleted

Exhibit A-14 – Non-conformity Hold Tag

Exhibit A-15 – Welding Process(es) Log

Exhibit A-16 – National Board “R” Report Registration Log

Exhibit A-17 – Pressure Test Certification

Exhibit A-18 – ASME Work Scope (for Repair Orders)

Exhibit A-19 – National Board “U” Report Registration Log



PROCESS SHEET OF WELDED REPAIRS, ALTERATIONS & FABRICATIONS (REV02)

Page 1 of 2

Job # _____
 Customer: _____
 Address: _____
 Object & Type: _____
 Identification # _____
 MAWP: _____
 Pressure Test: Pressure: _____

Contact: _____
 Date: _____
 ASME Code: _____ Section/Edition: _____
 Addenda: _____
 Procedure: _____
 Year Built: _____
 Temperature _____

Code Manager		Authorized Inspector		Completion Date	X	Description of Repair
Date	Signature	Date	Signature			Additional sheet(s) attached
					<input type="checkbox"/>	Drawings, Calculations
					<input type="checkbox"/>	
					<input type="checkbox"/>	Material Review
					<input type="checkbox"/>	
					<input type="checkbox"/>	Fit Up
					<input type="checkbox"/>	
					<input type="checkbox"/>	Nondestructive Examination
					<input type="checkbox"/>	
					<input type="checkbox"/>	Internal Inspection
					<input type="checkbox"/>	
					<input type="checkbox"/>	Post Weld Heat Treatment
					<input type="checkbox"/>	
					<input type="checkbox"/>	Final Inspection
					<input type="checkbox"/>	
					<input type="checkbox"/>	Hydrostatic Testing
					<input type="checkbox"/>	
					<input type="checkbox"/>	Stamping
					<input type="checkbox"/>	
					<input type="checkbox"/>	Data/Repair Report
					<input type="checkbox"/>	



PROCESS SHEET OF WELDED REPAIRS,
ALTERATIONS & FABRICATIONS (REV02)

EXHIBIT A-1

WELD DATA

JOB NUMBER: ITEM SERIAL No.:

WELD JOINT #	WELDER SYMBOL	FIT UP		FINAL		NDE	
		QUALITY CONTROL	AUTHORIZED INSPECTOR	QUALITY CONTROL	AUTHORIZED INSPECTOR	QUALITY CONTROL	AUTHORIZED INSPECTOR

ENGINEER		DATE:	
QC MANAGER		DATE:	
AUTHORIZED INSPECTOR		DATE:	



NONCONFORMING PRODUCT REPORT (NCR)

8.3.0QP01F1 - REV 06

EXHIBIT A-2

Date:		Part Number:	
Request By:		Part Name:	
Customer:		Quantity Reported:	
Job Number:		Total Quantity:	
Drawing Number:			

Notes:	
--------	--

Description of Nonconformance:	

DISPOSITION

Choose Disposition from below:				
<input type="checkbox"/> Scrap	<input type="checkbox"/> Rework	<input type="checkbox"/> Return to Vendor	<input type="checkbox"/> Use as is	<input type="checkbox"/> Design Variation Needed – PM Needs a copy.
<input type="checkbox"/> Other (Explain):				
Vendor PO Number:		Replacement Job Number:		

Disposition Authorization Signature _____ Date _____

REWORK INSTRUCTIONS	
Impact on Operation:	
Corrective Action:	

Inspector Authorization Signature _____ Date _____

☐ Completed

Approved By _____ Date _____

[illegible][illegible][illegible]



REQUISITION FORM

REQ #

Job Number

-

2-digit seq.

☐ Price & Delivery

☐ Material Requisition

Date:	
Request By:	
Customer:	
Job Name:	

PURCHASING DEPARTMENT USE ONLY			
<input type="checkbox"/>	Brad Landis	<input type="checkbox"/>	John Davis
<input type="checkbox"/>	Darlene Chapman	<input type="checkbox"/>	Jon Saul
<input type="checkbox"/>	James Crater	<input type="checkbox"/>	Phil Freed
<input type="checkbox"/>	Jim Davies	<input type="checkbox"/>	Preston Yothers

REFERENCE ONLY	
Prev. Job #	

				PURCHASING DEPARTMENT USE ONLY			
CHL PART #	QTY	DESCRIPTION	REQ'D DATE	Stock	Ordered Date	Delivery Date	P.O. #



CORRECTIVE AND PREVENTATIVE ACTION REQUEST

8.5.2QP01F1 – REV02

EXHIBIT A-6

When submitting this form, fill in Part 1 Only (5 and 6 in Part 1 are optional)

PART 1		Request #	
1 - Date:		2 - From:	
3 – Corrective or Preventative Action Request?		4 - Source:	
5 - Audit #	(if applicable)	6 – Customer:	(if applicable)

7 – Issue to Correct or Prevent:
EXHIBIT A-6

PART 2	
Assigned to: (Process Owner)	Reply due date:

PART 3	Investigation of Cause(s) and global assessment
Investigation of Cause(s) and global assessment (Global Assessment means checking company-wide and system-wide for other issues suggested by this issue)	
Corrective or Preventative Action taken:	
Date of Reply:	Projected date action will be in place:

PART 4	Follow-up Instructions: Who, what, where, when and how?
Follow Up Due Date: Actual Follow Up Date: By Whom:	



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CLAYTON H. LANDIS COMPANY, INC.

215-723-7284 FAX: 215-721-6347

WWW.CHLSYSTEMS.COM

PRODUCT ENGINEERING



MANUFACTURING



SYSTEM INSTALLATION

Purchase Order

PO# 57102

Exhibit A-8

04/14/2003

Page 1 of 1

Vendor:

ACR Machine, Inc.
21 North 10th Avenue
Coatesville, PA 19320-3382
USA

Ship To:

Clayton H. Landis Company Inc
476 Meetinghouse Road
Souderton, PA 18964

Vendor Information:

Vendor ID: 11657
Vendor Contact: Andy Sr.
Vendor Phone:
Vendor Fax:

Order Information

Ship Date: 4/25/2003
Ship Via: Vendor Truck
FOB: Souderton, PA

<u>Ln</u>	<u>Qty</u>	<u>Description</u>	<u>Unit Price</u>	<u>Ext Price</u>
1	1.00 EA	Machine Bearing Block Per Attached Drawing And Detailed Prints	2,140.0000 / EA	2,140.00
Job# 37419		Vend P/N:	CHL P/N: SCFMM23	

Total: \$2,140.00

-Contact Shawn Ragle with technical questions.

-Drawing and detailed instructions are attached to the housing.

IMPORTANT: All Packing Slips MUST reference this Purchase Order number.
Invoices MUST match this Purchase Order amount to be processed.

Buyer: _____ Date: _____

Bradley S. Landis



"Value through Excellence"

CLAYTON H. LANDIS COMPANY, INC.

215-723-7284 FAX: 215-723-9115

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PRODUCT ENGINEERING

MANUFACTURING

SYSTEM INSTALLATION

Receiving - Yard

Exhibit A-9

PO# 57102

04/14/2003

Page 1 of 1

Vendor:

ACR Machine, Inc.
21 North 10th Avenue
Coatesville, PA 19320-3382
USA

Ship To:

Clayton H. Landis Company Inc
476 Meetinghouse Road
Souderton, PA 18964

Vendor Information:

Vendor ID: 11657

Receiving Information:

Ship Date: 04/25/2003
Ship Via: Vendor Truck
Freight:

<u>Ln</u>	<u>Description</u>	<u>Qty</u>	<u>Qty Rcvd</u>	<u>By</u>	<u>Date</u>
1	Machine Bearing Block Per Attached Drawing And Detailed Prints				
	Vend P/N:	CHL P/N: SCFMM23	1.00 EA		
	- REL 1: 37419 Kraft Foods Inc; 37419- Notify: C. Shawn Ragle	1.00 EA			

-Contact Shawn Ragle with technical questions.

-Drawing and detailed instructions are attached to the housing.

Mark	Revision	ECR #	By	Date	Check'd By	Apprv'd By
1	MAT'L WAS 14 GA. 304 S/S	-	CEF	02/15/06		MAF
1	ADDED MATERIAL CERTS. NOTE	-	CEF	02/15/06		MAF

1 3/4"

4 1/4"

REPAIRED BY CLAYTON H. LANDIS CO. INC.
CERTIFICATE HOLDER

R3936
NATIONAL BOARD R
CERTIFICATE NUMBER

DATE REPAIRED









JOB NUMBER

ENGRAVE ALL MARKINGS
.006"-.012" DEEP


EXHIBIT A-10

CHL PART NO. - OSP105
CHL STOCK MINIMUM - N/A

NOTE: MATERIAL CERTS. REQUIRED.

[STANDARD TOLERANCES UNLESS SPECIFIED OTHERWISE ALTERNATE DIMENSION UNITS ARE FOR REFERENCE ONLY.		GENERAL FABRICATION	
MACHINING		GENERAL FABRICATION	
0.0	0.0250"	CONCENTRICITY 	0.002" TIR
0.00	0.0150"	STRAIGHTNESS 	= 0.002"
0.000	0.0050"	FLATNESS 	0.002"
		PERPENDICULARITY 	0.005"/10°
FRACTIONS	1/32"	PARALLELISM 	0.005"
ANGLES	0.2	SURFACE FINISH	32 μ"AA
FILLETS SHOWN SHARP = .03"R MAX. BREAK CORNERS .03" X 45° CHAMFER		PERPENDICULARITY 	
TAPPED HOLES - MIN. DEPTH FOR FULL THREADS = 1.8 X DIAMETER		PARALLELISM 	
CHAMFER ALL TAPPED HOLES TO ROOT OF FIRST THREAD		PERPENDICULARITY 	
ALL DIMENSIONS ARE INCHES UNLESS SPECIFIED OTHERWISE			

1	OSP105	REPAIR TAG 18 GA UNPOL. 304L/SA240 S/S SHEET 3 1/4" X 4 1/4"	L D
ITEM	Unit Qty Total Qty	PART NUMBER DETAIL DWG ASSEMBLY DWG	Unit Wt (Lbs) Codes
IDENTIFICATION		DATE	REMARK
Drawn W. SAUERHOFER		3/26/04	
Engineer			
Approved			
Checked			
Issued			
Customer		Title	ASME REPAIR TAG
Ref. Dwg.		Dwg. No.	OSP105-001
Job Number	Size A	Scale FULL	Sheet 1 Of 1
Unless Noted Otherwise			



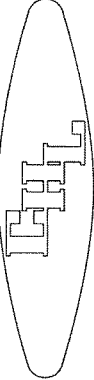
CLAYTON H. LANDIS COMPANY INC.
476 Meetinghouse Rd. Souderton, Pa. 18964
(215)723-7284 Fax(215)723-9115

Mark	Revision	ECR #	By	Date	Check'd By	Appr'd By
1	MAT'L WAS 14 GA 304 S/S.; MODIFIED TAG TEXT	-	CEF	02/15/06		MAF
1	ADDED MATERIAL CERTS. NOTE	-	CEF	02/15/06		MAF

4 3/4"

CERTIFIED BY

CLAYTON H. LANDIS CO., INC.



PSI A ° F

MAX. AT WORKING PRESSURE

PSI A ° F

MAX. ALLOWABLE EX. WORKING PRESSURE

° F AT PSI

VIN. DESIGN METAL TEMP.

MANUFACTURER'S STRAI NUMBER

YEAR BUILT

4 1/2"

ENGRAVE ALL MARKINGS
.006" - .012" DEEP


CHL PART NO. - OSP104
CHL STOCK MINIMUM - N/A

EXHIBIT A-11

NOTE: MATERIAL CERTS. REQUIRED.

STANDARD TOLERANCES, UNLESS SPECIFIED OTHERWISE		ALTERNATE DIMENSION UNITS ARE FOR REFERENCE ONLY.	
MACHINING		GENERAL FABRICATION	
0.0	0.0250"	CONCENTRICITY	0.002" TIR
0.00	0.0150"	STRAIGHTNESS	0.002"
0.000	0.0050"	FLATNESS	0.002"
		PERPENDICULARITY	0.005"/10
FRACTIONS	1/32"	PARALLELISM	0.005"
ANGLES	0.2	SURFACE FINISH	32 μAA
FILLET'S SHOWN SHARP = .03" R MAX.		BREAK CORNERS .03" X 45° CHAMFER	
TAPPED HOLES - MIN. DEPTH FOR FULL THREADS = 1.8 X DIAMETER		CHAMFER ALL TAPPED HOLES TO ROOT OF FIRST THREAD	
ALL DIMENSIONS ARE INCHES UNLESS SPECIFIED OTHERWISE			

1	OSP104	18 GA. UNPOL. 304L/SA240 S/S SHEET 4 1/2" X 4 3/4"	L	D
ITEM	UNIT QTY	PART NUMBER	STANDARD DESCRIPTION	
		DETAIL DWG	SPECIFICATION	
		ASSEMBLY DWG	REMARK	
IDENTIFICATION		DATE		
Drawn	W.SAUERHOEFER	2/24/04		
Engineer	M.FRIES	2/24/04		
Approved				
Checked				
Issued				
Customer		CHL	Title	
Ref. Dwg.			PRESSURE VESSEL NATIONAL BOARD TAG	
Dwg. No.		OSP104-001	Rev.	
Job Number	Size	Scale	Full	Sheet
	A	1"	1	1 Of 1



CLAYTON H. LANDIS COMPANY INC.
476 Meetinghouse Rd. Souderton, Pa. 18964
(215)723-7284 Fax(215)723-9115

Exhibit A-12

Calibration Label

CALIBRATION	
By _____	Date: _____
Due _____	

Actual size is 1.5 x $\frac{3}{4}$ inches

CALIBRATION	
By _____	Date: _____
Due _____	

Exhibit A-14

Hold Tag



EXHIBIT A-15

Welding Process(es) Log

WELDER CONTINUITY RECORD

WELDER'S NAME:	STAMP #:	YEAR:
----------------	----------	-------

SMAW PROCESS						
	JAN:	FEB:	MAR:	APR:	MAY:	JUN:
WPS						
JOB						
	JUL:	AUG:	SEP:	OCT:	NOV:	DEC:
WPS						
JOB						

GTAW PROCESS						
	JAN:	FEB:	MAR:	APR:	MAY:	JUN:
WPS						
JOB						
	JUL:	AUG:	SEP:	OCT:	NOV:	DEC:
WPS						
JOB						

GMAW PROCESS						
	JAN:	FEB:	MAR:	APR:	MAY:	JUN:
WPS						
JOB						
	JUL:	AUG:	SEP:	OCT:	NOV:	DEC:
WPS						
JOB						

SAW PROCESS						
	JAN:	FEB:	MAR:	APR:	MAY:	JUN:
WPS						
JOB						
	JUL:	AUG:	SEP:	OCT:	NOV:	DEC:
WPS						
JOB						

Exhibit A-16

National Board “R” Report Registration Log

[illegible]



PRESSURE TEST CERTIFICATION

(REV00)

EXHIBIT A-17

Job Number	
Job Name	
Component / Drawing Number	

Required Test Pressure (Vacuum)	
---------------------------------	--

Test Start Pressure	Test End Pressure	Test Start Time	Test End Time

EXHIBIT A-17

Pressure Change	
-----------------	--

Test Duration	
---------------	--

☐ PASS ☐ FAIL

Gage Number	
Gage Pressure Range	
Gage Calibration Date	

Witnessed By

Date



Customer: _____ Contact: _____
Job #: _____ Date: _____
Job Title: _____
Project Manager: _____ CHL Certified Welder: _____

1. Documentation

- | | |
|---|--|
| <input type="checkbox"/> U-1 Report | <input type="checkbox"/> Material Certifications (MTR/COC) |
| <input type="checkbox"/> R-1 Report | <input type="checkbox"/> Process Sheet of Welded Repairs |
| <input type="checkbox"/> Welder Certification | <input type="checkbox"/> Inspector's Log Book |
| <input type="checkbox"/> Welder Continuity Record | <input type="checkbox"/> Calculations (if required) |

2. Quality Control Responsibilities

- ☐ Determine damage, cause & proposed method of repair
- ☐ Call Authorized Inspector & determine repair procedure & date for his inspection
- ☐ CHL PO# for Inspection by 'Authorized Inspector' from Hartford Steam Boiler _____

3. Equipment

- | | |
|--|--|
| <input type="checkbox"/> Rod Oven | <input type="checkbox"/> Hydro Gauges & Pump (if required) |
| <input type="checkbox"/> Welding Materials, Type _____ | <input type="checkbox"/> Dye Penetrant (if required) |
| <input type="checkbox"/> Materials with Certifications | <input type="checkbox"/> Temp Stick (if required) |
| (See R-1 report for necessary materials) | Temp Range _____ |

4. Work Instructions

5. Repair 'Name Plate'

- ☐ Name Plate filled out for job
- ☐ Name Plate stamped by Code Manager

6. CHL Certified Welder Responsibilities

- | | |
|---|--|
| <input type="checkbox"/> Inspect defect | <input type="checkbox"/> Dye Penetrant check (if applicable) |
| <input type="checkbox"/> Grind out affected area (if applicable) | <input type="checkbox"/> Weld repair using procedure # _____ |
| <input type="checkbox"/> Hydro test repair (if applicable-witnessed by Authorized Inspector, if required) | |
| <input type="checkbox"/> Have 'Authorized Inspector' sign R-1 Report | |
| <input type="checkbox"/> Have 'Authorized Inspector' sign Inspector's Log Book | |
| <input type="checkbox"/> Have 'Authorized Inspector' sign Process Sheet of Welded Repairs | |
| <input type="checkbox"/> Return all paperwork to Code Manager for filing & distribution | |

7. Notes / Comments

(use reverse side of sheet if necessary)

EXHIBIT A-19

National Board "U" Report Registration Log

[illegible]

From: "Rick Keiper" <rick.keiper@chlsystems.com>
To: "Ray L. Kellar" <RLK2@nrc.gov>
Date: 09/06/2006 12:26:20 PM
Subject: RE: CHL Qualified Welding Procedures and Pool Installation drawing

Hi Ray,

Thank you for giving us the opportunity to keep any proprietary information out of the public domain.

The information that I sent you does not contain any information that we consider to be proprietary in nature.

Thank you again for your consideration.

Rick Keiper

-----Original Message-----

From: Ray L. Kellar [mailto:RLK2@nrc.gov]
Sent: Wednesday, September 06, 2006 10:51 AM
To: Rick Keiper
Cc: Roberto Torres
Subject: Re: CHL Qualified Welding Procedures and Pool Installation drawing

Hi Rick,

I received your email. I have not had time to complete a detailed review of the information that you provided at this time. Roberto is entering the information into ADAMS. We need to confirm whether you consider any of the information as proprietary or not. If any of the information is proprietary, it would not be publically available. If so, you will need to provide a statement that the information is proprietary under the requirements of 10 CFR 2.390. The letter would need to be notarized as well. Contact Roberto Torres if you need additional information (817-860-8189).

Thanks,

Ray Kellar

Ray L. Kellar, P.E.
US NRC RIV
Phone: 817-860-8164
Fax: 817-860-8188
Email: RLK2@nrc.gov

>>> "Rick Keiper" <rick.keiper@chlsystems.com> 08/30/2006 3:38 PM >>>
> Dear Ray,
>
> CHL Systems is an ISO 9001:2000 Certified company. We first received this certification in 2002 and have maintained it since then.
>
> As part of becoming ISO Certified, we have put in place many Quality Control Procedures. Part of these Quality Control Procedures control the procedures used when doing work on ASME Pressure Vessels. The

ML062480089

controlling document for work on ASME Pressure Vessels is our ASME Quality Control Manual. I have included a copy of this manual. Section VIII, Welding Control, pages 14 and 15 deal specifically with how welders are qualified for ASME welding procedures, how and when these procedures are used, and how this is monitored.

>

> Much of the work we do here at CHL Systems is on ASME Pressure Vessels which require ASME Pressure Vessel Stamps.

>

> In order to meet the ASME requirements, all welding done on these vessels must be done only by individuals who are qualified for ASME welding procedures. For this reason, we have many welders who are qualified for a number of ASME welding procedures. The ASME procedures that we have welders qualified for are listed below.

>

>

>

ASME Welding Procedure	Description of Procedure
LW1	SMAW -
Carbon Steel A106 to A106	
LW7	GTAW -
Stainless Steel P8 to P8	
LW16	SMAW - Carbon
Steel 6010 Root - 7018 Cap & Fill	
P8-1599	GTAW/GMAW -
Stainless Steel TIG Root - MIG Cap & Fill	
P1-1730	SMAW - Carbon
Steel 6010 Root - 7018 Cap & Fill	
P8-1778	FCAW -
Stainless Steel P8 to P8	
P1-1796	FCAW - Carbon
Steel P1 to P1	
P8-1922	GTAW -
Stainless Steel P8 to P8	
P1P8-1900	FCAW - Carbon
Steel P1 to Stainless Steel P8	

>

>

>

> In addition to ASME qualified welders, we also have welders that are qualified for AWS welding procedures. The AWS procedure that we have welders qualified for is listed below. In addition to this specific AWS procedure, many of our welders are qualified for the prequalified AWS welds under AWS D1.1.

>

>

>

>

AWS D1.1 Welding Procedure	Description of Procedure
P1-1797	FCAW - Carbon
Steel to Carbon Steel	

>

>

>
 >
 > Since the irradiator pool is not a structural element of the
 irradiator building (in fact it is specifically isolated from the
 building), it is not required to be welded using AWS welding procedures.
 Also, since the irradiator pool is not a pressure vessel, it is not
 required to be welded using ASME welding procedures. However, the same
 people who are qualified for the ASME and AWS welding procedures are the
 people who do the welding on the irradiator pool. The welds used on the
 irradiator pool comply with both prequalified AWS welds and our ASME
 weld procedures.
 >
 >
 >
 >
 >
 >
 > Note: I have also included as an attachment the Pool Installation
 drawing you requested.
 >
 >
 >
 >
 >
 > Rick Keiper
 > Senior Engineer
 > CHL Systems
 > ph: 215-723-7284
 > fax: 215-723-9115
 > rick.keiper@chlsystems.com
 >
 >
 >
 >> <<ASME Quality Control Manual.pdf>> >>
 <<POOLA-104-000-SHT1-REV04.pdf>> >> <<POOLA-104-000-SHT2-REV04.pdf>>
 >

CC: "Kevin Landis" <kevin.landis@chlsystems.com>, "Russell Stein (E-mail)"
 <GrayStarNJ@aol.com>

Mail Envelope Properties (44FF04AB.49C : 5 : 38044)

Subject: RE: CHL Qualified Welding Procedures and Pool Installation drawing
Creation Date 09/06/2006 12:25:30 PM
From: "Rick Keiper" <rick.keiper@chlsystems.com>

Created By: rick.keiper@chlsystems.com

Recipients

nrc.gov

ARL_PO.ARL_DO

RLK2 (Ray L. Kellar)

aol.com

GrayStarNJ CC (Russell Stein (E-mail))

chlsystems.com

kevin.landis CC (Kevin Landis)

Post Office

ARL_PO.ARL_DO

Route

nrc.gov

aol.com

chlsystems.com

Files	Size	Date & Time
MESSAGE	4853	09/06/2006 12:25:30 PM
Mime.822	6339	

Options

Expiration Date: None
Priority: Standard
ReplyRequested: No
Return Notification: None

Concealed Subject: No
Security: Standard

Junk Mail Handling Evaluation Results

Message is eligible for Junk Mail handling
This message was not classified as Junk Mail

Junk Mail settings when this message was delivered

Junk Mail handling disabled by User
Junk List is not enabled

Junk Mail using personal address books is not enabled
Block List is not enabled