PROFESSIONAL CONSULTANT SERVICES AGREEMENT

REINHAUSEN MANUFACTURING INC

Load Tap Changer (LTC) Replacement,
Substation Transformer Testing and Instrumentation Upgrade

THIS PROFESSIONAL CONSULTANT SERVICES AGREEMENT ("Agreement") is made and entered into this 12 day of _October, 2015 ("Effective Date"), by and between the CITY OF RIVERSIDE ("City"), a California charter city and municipal corporation and REINHAUSEN MANUFACTURING INC, a Delaware corporation authorized to do business in California ("Consultant").

1. **Scope of Services**. City agrees to retain and does hereby retain Consultant and Consultant agrees to provide the services more particularly described in Exhibit "A," "Scope of Services" ("Services"), attached hereto and incorporated herein by reference, in conjunction with Load Tap Changer (LTC) Replacement, Substation Transformer Testing and Instrumentation Upgrade ("Project").

2. **Term**. This Agreement shall be effective on the date first written above and shall remain in effect for one year, unless otherwise terminated pursuant to the provisions herein.

3. **Compensation/Payment**. Consultant shall perform the Services under this Agreement for the total sum not to exceed *Two Million Nine Hundred Fourteen Thousand Six Hundred Seventy-Eight Dollars Eight Cents* ($2,914,678.08) payable in accordance with the terms set forth in Exhibit "B." Said payment shall be made in accordance with City's usual accounting procedures upon receipt and approval of an itemized invoice setting forth the services performed. The invoices shall be delivered to City at the address set forth in Section 4 hereof.

4. **Notices**. Any notices required to be given, hereunder shall be in writing and shall be personally served or given by mail. Any notice given by mail shall be deemed given when deposited in the United States Mail, certified and postage prepaid, addressed to the party to be served as follows:

To City	To Consultant
Finance Department City of Riverside Attn: Art Torres 3900 Main Street Riverside, CA 92522	Reinhausen Manufacturing Inc Attn: Luis Chadinha 1542 Terracina Circle Manteca, CA 95336

5. **Prevailing Wage**. If applicable, Consultant and all subcontractors are required to pay the general prevailing wage rates of per diem wages and overtime and holiday wages determined by the Director of the Department of Industrial Relations under Section 1720 et seq. of the California Labor Code and implemented by Resolution No. 13346 of the City Council of the City of Riverside.

The Director's determination is available on-line at: www.dir.ca.gov/dlsr/DPreWageDetermination.htm and is referred to and made a part hereof; the wage rates therein ascertained, determined, and specified are referred to and made a part hereof as though fully set forth herein.

6. **Contract Administration**. A designee of the City will be appointed in writing by the City Manager or Department Director to administer this Agreement on behalf of City and shall be referred to herein as Contract Administrator.

7. **Standard of Performance**. While performing the Services, Consultant shall exercise the reasonable professional care and skill customarily exercised by reputable members of Consultant's profession practicing in the Metropolitan Southern California Area, and shall use reasonable diligence and best judgment while exercising its professional skill and expertise.

8. **Personnel**. Consultant shall furnish all personnel necessary to perform the Services and shall be responsible for their performance and compensation. Consultant recognizes that the qualifications and experience of the personnel to be used are vital to professional and timely completion of the Services. The key personnel listed in Exhibit "C" attached hereto and incorporated herein by this reference and assigned to perform portions of the Services shall remain assigned through completion of the Services, unless otherwise mutually agreed by the parties in writing, or caused by hardship or resignation in which case substitutes shall be subject to City approval.

9. **Assignment and Subcontracting**. Neither party shall assign any right, interest, or obligation in or under this Agreement to any other entity without prior written consent of the other party. In any event, no assignment shall be made unless the assignee expressly assumes the obligations of assignor under this Agreement, in a writing satisfactory to the parties. Consultant acknowledges that any assignment may, at the City's sole discretion, require City Manager and/or City Council approval. Consultant shall not subcontract any portion of the work required by this Agreement without prior written approval by the responsible City Contract Administrator. Subcontracts, if any, shall contain a provision making them subject to all provisions stipulated in this Agreement, including without limitation, the insurance obligations set forth in Section 12. The Consultant acknowledges and agrees that the City is an intended beneficiary of any work performed by any subcontractor for purposes of establishing a duty of care between any subcontractor and the City.

10. **Independent Contractor**. In the performance of this Agreement, Consultant, and Consultant's employees, subcontractors and agents, shall act in an independent capacity as independent contractors, and not as officers or employees of the City of Riverside. Consultant acknowledges and agrees that the City has no obligation to pay or withhold state or federal taxes or to provide workers' compensation or unemployment insurance to Consultant, or to Consultant's employees, subcontractors and agents. Consultant, as an independent contractor, shall be responsible for any and all taxes that apply to Consultant as an employer.

11. **Indemnification.**

11.1 **Defense Obligation.** Consultant agrees, at its cost and expense, to promptly defend the City, and the City's employees, officers, managers, agents and council members (collectively the "Parties to be Defended") from and against any and all claims, allegations, lawsuits, arbitration proceedings, administrative proceedings, regulatory proceedings, or other legal proceedings which arise out of, or relate to, or are in any way connected with: 1) the Services, work, activities, operations, or duties of the Consultant, or of anyone employed by the Consultant, or 2) any breach of the Agreement by the Consultant. This duty to defend shall apply whether or not such claims, allegations, lawsuits or proceedings have merit or are meritless, or which involve claims or allegations that any or all of the Parties to be Defended were actively, passively, or concurrently negligent, or which otherwise assert that the Parties to be Defended are responsible, in whole or in part, for any loss, damage or injury. Consultant agrees to provide this defense immediately upon written notice from the City, and with well qualified, adequately insured and experienced legal counsel acceptable to City. This obligation to defend as set forth herein is binding on the successors, assigns and heirs of Consultant and shall survive the termination of Consultant's Services under this Agreement.

11.2 **Indemnity.** Except as to the sole negligence or willful misconduct of the City, Consultant agrees to indemnify, protect and hold harmless the Indemnified Parties from and against any claim for damage, charge, lawsuit, action, judicial, administrative, regulatory or arbitration proceeding, damage, cost, expense (including counsel and expert fees), judgment, civil fine and penalties, liabilities or losses of any kind or nature whatsoever whether actual, threatened or alleged, which arise out of, pertain to, or relate to, or are a consequence of, or are attributable to, or are in any manner connected with the performance of the Services, work, activities, operations or duties of the Consultant, or anyone employed by the Consultant or for services rendered to Consultant in the performance of this Agreement, notwithstanding that the City may have benefited from its work or services. This indemnification provision shall apply to any acts, omissions, negligence, recklessness, or willful misconduct, whether active or passive, on the part of the Consultant or anyone employed or working under the Consultant.

12. **Insurance.**

12.1 **General Provisions.** Prior to the City's execution of this Agreement, Consultant shall provide satisfactory evidence of, and shall thereafter maintain during the term of this Agreement, such insurance policies and coverages in the types, limits, forms and ratings required herein. The rating and required insurance policies and coverages may be modified in writing by the City's Risk Manager or City Attorney, or a designee, unless such modification is prohibited by law.

12.1.1 **Limitations.** These minimum amounts of coverage shall not constitute any limitation or cap on Consultant's indemnification obligations under Section 11 hereof.

12.1.2 **Ratings.** Any insurance policy or coverage provided by Consultant or subcontractors as required by this Agreement shall be deemed inadequate and a

material breach of this Agreement, unless such policy or coverage is issued by insurance companies authorized to transact insurance business in the State of California with a policy holder's rating of A or higher and a Financial Class of VII or higher.

12.1.3 **Cancellation**. The policies shall not be canceled unless thirty (30) days prior written notification of intended cancellation has been given to City by certified or registered mail, postage prepaid.

12.1.4 **Adequacy**. The City, its officers, employees and agents make no representation that the types or limits of insurance specified to be carried by Consultant pursuant to this Agreement are adequate to protect Consultant. If Consultant believes that any required insurance coverage is inadequate, Consultant will obtain such additional insurance coverage as Consultant deems adequate, at Consultant's sole expense.

12.2 **Workers' Compensation Insurance**. By executing this Agreement, Consultant certifies that Consultant is aware of and will comply with Section 3700 of the Labor Code of the State of California requiring every employer to be insured against liability for workers' compensation, or to undertake self-insurance before commencing any of the work. Consultant shall carry the insurance or provide for self-insurance required by California law to protect said Consultant from claims under the Workers' Compensation Act. Prior to City's execution of this Agreement, Consultant shall file with City either 1) a certificate of insurance showing that such insurance is in effect, or that Consultant is self-insured for such coverage, or 2) a certified statement that Consultant has no employees, and acknowledging that if Consultant does employ any person, the necessary certificate of insurance will immediately be filed with City. Any certificate filed with City shall provide that City will be given ten (10) days prior written notice before modification or cancellation thereof.

12.3 **Commercial General Liability and Automobile Insurance**. Prior to City's execution of this Agreement, Consultant shall obtain, and shall thereafter maintain during the term of this Agreement, commercial general liability insurance and automobile liability insurance as required to insure Consultant against damages for personal injury, including accidental death, as well as from claims for property damage, which may arise from or which may concern operations by anyone directly or indirectly employed by, connected with, or acting for or on behalf of Consultant. The City, and its officers, employees and agents, shall be named as additional insureds under the Consultant's insurance policies.

12.3.1 Consultant's commercial general liability insurance policy shall cover both bodily injury (including death) and property damage (including, but not limited to, premises operations liability, products-completed operations liability, independent contractor's liability, personal injury liability, and contractual liability) in an amount not less than $1,000,000 per occurrence and a general aggregate limit in the amount of not less than $2,000,000.

12.3.2 Consultant's automobile liability policy shall cover both bodily injury and property damage in an amount not less than $1,000,000 per occurrence and an aggregate limit of not less than $1,000,000. All of Consultant's automobile and/or commercial general liability insurance policies shall cover all vehicles used in connection with Consultant's

performance of this Agreement, which vehicles shall include, but are not limited to, Consultant owned vehicles, Consultant leased vehicles, Consultant's employee vehicles, Consultant non-owned vehicles and Consultant hired vehicles.

12.3.3 Prior to City's execution of this Agreement, copies of insurance policies or original certificates along with additional insured endorsements acceptable to the City evidencing the coverage required by this Agreement, for both commercial general and automobile liability insurance, shall be filed with City and shall include the City and its officers, employees and agents, as additional insureds. Said policies shall be in the usual form of commercial general and automobile liability insurance policies, but shall include the following provisions:

> It is agreed that the City of Riverside, and its officers, employees and agents, are added as additional insureds under this policy, solely for work done by and on behalf of the named insured for the City of Riverside.

12.3.4 The insurance policy or policies shall also comply with the following provisions:

a. The policy shall be endorsed to waive any right of subrogation against the City and its sub-consultants, employees, officers and agents for services performed under this Agreement.

b. If the policy is written on a claims-made basis, the certificate should so specify and the policy must continue in force for one year after completion of the services. The retroactive date of coverage must also be listed.

c. The policy shall specify that the insurance provided by Consultant will be considered primary and not contributory to any other insurance available to the City and Endorsement No. CG 20010413 shall be provided to the City.

12.4 **Errors and Omissions Insurance**. Prior to City's execution of this Agreement, Consultant shall obtain, and shall thereafter maintain during the term of this Agreement, errors and omissions professional liability insurance in the minimum amount of $1,000,000 to protect the City from claims resulting from the Consultant's activities.

12.5 **Subcontractors' Insurance**. Consultant shall require all of its subcontractors to carry insurance, in an amount sufficient to cover the risk of injury, damage or loss that may be caused by the subcontractors' scope of work and activities provided in furtherance of this Agreement, including, but without limitation, the following coverages: Workers Compensation, Commercial General Liability, Errors and Omissions, and Automobile liability. Upon City's request, Consultant shall provide City with satisfactory evidence that Subcontractors have obtained insurance policies and coverages required by this section.

13. **Business Tax**. Consultant understands that the Services performed under this Agreement constitutes doing business in the City of Riverside, and Consultant agrees that Consultant will register for and pay a business tax pursuant to Chapter 5.04 of the Riverside Municipal Code and keep such tax certificate current during the term of this Agreement.

14. **Time of Essence**. Time is of the essence for each and every provision of this Agreement.

15. **City's Right to Employ Other Consultants**. City reserves the right to employ other Consultants in connection with the Project. If the City is required to employ another consultant to complete Consultant's work, due to the failure of the Consultant to perform, or due to the breach of any of the provisions of this Agreement, the City reserves the right to seek reimbursement from Consultant.

16. **Accounting Records**. Consultant shall maintain complete and accurate records with respect to costs incurred under this Agreement. All such records shall be clearly identifiable. Consultant shall allow a representative of City during normal business hours to examine, audit, and make transcripts or copies of such records and any other documents created pursuant to this Agreement. Consultant shall allow inspection of all work, data, documents, proceedings, and activities related to the Agreement for a period of three (3) years from the date of final payment under this Agreement.

17. **Confidentiality**. All ideas, memoranda, specifications, plans, procedures, drawings, descriptions, computer program data, input record data, written information, and other materials either created by or provided to Consultant in connection with the performance of this Agreement shall be held confidential by Consultant, except as otherwise directed by City's Contract Administrator. Nothing furnished to Consultant which is otherwise known to the Consultant or is generally known, or has become known, to the related industry shall be deemed confidential. Consultant shall not use City's name or insignia, photographs of the Project, or any publicity pertaining to the Services or the Project in any magazine, trade paper, newspaper, television or radio production, website, or other similar medium without the prior written consent of the City.

18. **Ownership of Documents**. All reports, maps, drawings and other contract deliverables prepared under this Agreement by Consultant shall be and remain the property of City. Consultant shall not release to others information furnished by City without prior express written approval of City.

19. **Copyrights.** Consultant agrees that any work prepared for City which is eligible for copyright protection in the United States or elsewhere shall be a work made for hire. If any such work is deemed for any reason not to be a work made for hire, Consultant assigns all right, title and interest in the copyright in such work, and all extensions and renewals thereof, to City, and agrees to provide all assistance reasonably requested by City in the establishment, preservation and enforcement of its copyright in such work, such assistance to be provided at City's expense but without any additional compensation to Consultant. Consultant agrees to waive all moral rights relating to the work developed or produced, including without limitation

any and all rights of identification of authorship and any and all rights of approval, restriction or limitation on use or subsequent modifications.

20. **Conflict of Interest**. Consultant, for itself and on behalf of the individuals listed in Exhibit "C," represents and warrants that by the execution of this Agreement, they have no interest, present or contemplated, in the Project affected by the above-described Services. Consultant further warrants that neither Consultant, nor the individuals listed in Exhibit "C" have any real property, business interests or income interests that will be affected by this project or, alternatively, that Consultant will file with the City an affidavit disclosing any such interest.

21. **Solicitation**. Consultant warrants that Consultant has not employed or retained any person or agency to solicit or secure this Agreement, nor has it entered into any agreement or understanding for a commission, percentage, brokerage, or contingent fee to be paid to secure this Agreement. For breach of this warranty, City shall have the right to terminate this Agreement without liability and pay Consultant only for the value of work Consultant has actually performed, or, in its sole discretion, to deduct from the Agreement price or otherwise recover from Consultant the full amount of such commission, percentage, brokerage or commission fee. The remedies specified in this section shall be in addition to and not in lieu of those remedies otherwise specified in this Agreement.

22. **General Compliance with Laws**. Consultant shall keep fully informed of federal, state and local laws and ordinances and regulations which in any manner affect those employed by Consultant, or in any way affect the performance of services by Consultant pursuant to this Agreement. Consultant shall at all times observe and comply with all such laws, ordinances and regulations, and shall be solely responsible for any failure to comply with all applicable laws, ordinances and regulations. Consultant represents and warrants that Consultant has obtained all necessary licenses to perform the Scope of Services and that such licenses are in good standing. Consultant further represents and warrants that the services provided herein shall conform to all ordinances, policies and practices of the City of Riverside.

23. **Waiver**. No action or failure to act by the City shall constitute a waiver of any right or duty afforded City under this Agreement, nor shall any such action or failure to act constitute approval of or acquiescence in any breach thereunder, except as may be specifically, provided in this Agreement or as may be otherwise agreed in writing.

24. **Amendments**. This Agreement may be modified or amended only by a written agreement and/or change order executed by the Consultant and City.

25. **Termination**. City, by notifying Consultant in writing, shall have the right to terminate any or all of Consultant's services and work covered by this Agreement at any time. In the event of such termination, Consultant may submit Consultant's final written statement of the amount of Consultant's services as of the date of such termination based upon the ratio that the work completed bears to the total work required to make the report complete, subject to the City's rights under Sections 15 and 25 hereof. In ascertaining the work actually rendered through the termination date, City shall consider completed work, work in progress and complete and incomplete reports and other documents only after delivered to City.

25.1 Other than as stated below, City shall give Consultant thirty (30) days prior written notice prior to termination.

25.2 City may terminate this Agreement upon fifteen (15) days written notice to Consultant, in the event:

25.2.1 Consultant substantially fails to perform or materially breaches the Agreement; or
25.2.2 City decides to abandon or postpone the Project.

25.3 Consultant may terminate this Agreement upon (15) days written notice to City, in the event that City fails to remit payment for two (2) consecutive pay cycles.

26. **Offsets**. Consultant acknowledges and agrees that with respect to any business tax or penalties thereon, utility charges, invoiced fee or other debt which Consultant owes or may owe to the City, City reserves the right to withhold and offset said amounts from payments or refunds or reimbursements owed by City to Consultant. Notice of such withholding and offset, shall promptly be given to Consultant by City in writing. In the event of a dispute as to the amount owed or whether such amount is owed to the City, City will hold such disputed amount until either the appropriate appeal process has been completed or until the dispute has been resolved.

27. **Successors and Assigns**. This Agreement shall be binding upon City and its successors and assigns, and upon Consultant and its permitted successors and assigns, and shall not be assigned by Consultant, either in whole or in part, except as otherwise provided in paragraph 9 of this Agreement.

28. **Venue and Attorneys' Fees**. Any action at law or in equity brought by either of the parties hereto for the purpose of enforcing a right or rights provided for by this Agreement shall be tried in a court of competent jurisdiction in the County of Riverside, State of California, and the parties hereby waive all provisions of law providing for a change of venue in such proceedings to any other county. In the event either party hereto shall bring suit to enforce any term of this Agreement or to recover any damages for and on account of the breach of any term or condition of this Agreement, it is mutually agreed that the prevailing party in such action shall recover all costs thereof, including reasonable attorneys' fees. However, the recovery of attorneys' fees by the prevailing party is limited to individual actions or proceedings in which the City elects, at the initiation of that individual action or proceeding, to seek recovery of its own attorneys' fee. In no action shall an award of attorneys' fees to the prevailing party exceed the amount of reasonable attorneys' fees incurred by the City in the action or proceeding.

29. **Nondiscrimination**. During Consultant's performance of this Agreement, Consultant shall not discriminate on the grounds of race, religious creed, color, national origin, ancestry, age, physical disability, mental disability, medical condition, including the medical condition of Acquired Immune Deficiency Syndrome (AIDS) or any condition related thereto,

marital status, sex, genetic information, gender, gender identity, gender expression, or sexual orientation, in the selection and retention of employees and subcontractors and the procurement of materials and equipment, except as provided in Section 12940 of the California Government Code. Further, Consultant agrees to conform to the requirements of the Americans with Disabilities Act in the performance of this Agreement.

30. **Severability**. Each provision, term, condition, covenant and/or restriction, in whole and in part, of this Agreement shall be considered severable. In the event any provision, term, condition, covenant and/or restriction, in whole and/or in part, of this Agreement is declared invalid, unconstitutional, or void for any reason, such provision or part thereof shall be severed from this Agreement and shall not affect any other provision, term, condition, covenant and/or restriction of this Agreement, and the remainder of the Agreement shall continue in full force and effect.

31. **Authority**. The individuals executing this Agreement and the instruments referenced herein on behalf of Consultant each represent and warrant that they have the legal power, right and actual authority to bind Consultant to the terms and conditions hereof and thereof.

32. **Entire Agreement**. This Agreement constitutes the final, complete, and exclusive statement of the terms of the agreement between the parties pertaining to the subject matter of this Agreement, and supersedes all prior and contemporaneous understandings or agreements of the parties. Neither party has been induced to enter into this Agreement by and neither party is relying on, any representation or warranty outside those expressly set forth in this Agreement.

33. **Interpretation**. City and Consultant acknowledge and agree that this Agreement is the product of mutual arms-length negotiations and accordingly, the rule of construction, which provides that the ambiguities in a document shall be construed against the drafter of that document, shall have no application to the interpretation and enforcement of this Agreement.

33.1 Titles and captions are for convenience of reference only and do not define, describe or limit the scope or the intent of the Agreement or any of its terms. Reference to section numbers, are to sections in the Agreement unless expressly stated otherwise.

33.2 This Agreement shall be governed by and construed in accordance with the laws of the State of California in effect at the time of the execution of this Agreement.

33.3 In the event of a conflict between the body of this Agreement and Exhibit "A" attached hereto, the terms contained in Exhibit "A" shall be controlling.

34. **Exhibits.** The following exhibits attached hereto are incorporated herein to this Agreement by this reference:

Exhibit "A" - Scope of Services
Exhibit "B" - Compensation
Exhibit "C" - Key Personnel

IN WITNESS WHEREOF, City and Consultant have caused this Agreement to be duly executed the day and year first above written.

CITY OF RIVERSIDE, a California charter city and municipal corporation

By: _____
City Manager

Attest: _____
City Clerk

Approved as to Form:

By: _____
Assistant City Attorney

CERTIFIED AS TO FUNDS AVAILABILITY:

By: _____
Finance Director

REINHAUSEN MANUFACTURING, a Delaware corporation authorized to do business in California

By: _____

Bernhard Kurth
Printed Name

President
Title

By: _____

Dale Aldridge
Printed Name

C.F.O.
Title

CA #15-0226 SW 10/01/15
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Proposer's Noncollusion Declaration

NONCOLLUSION DECLARATION TO BE EXECUTED BY PROPOSER AND SUBMITTED WITH PROPOSAL

The undersigned declares:

I am the President of Reinhausen Manufacturing Inc., the party making the foregoing proposal. The proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The proposal is genuine and not collusive or sham. The proposer has not directly or indirectly induced or solicited any other proposer to put in a false or sham proposal. The proposer has not directly or indirectly colluded, conspired, connived, or agreed with any proposer or anyone else to put in a sham proposal, or to refrain from proposing. The proposer has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the proposal price of the proposer or any other proposer or to fix any overhead, profit, or cost element of the proposal price, or of that of any other proposer. All statements contained in the proposal are true. The proposer has not, directly or indirectly, submitted his or her proposal price or any breakdown thereof, or the contents thereof, or divulged information or data relative therefor, to any corporation, partnership, company, association, organization, proposal depository, or to any member or agent thereof to effectuate a collusive or sham proposal, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a proposer that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the proposer.

I declare under penalty of perjury of the laws of the State of California that the above information is true and correct and that this declaration is executed on September 10, 2015 at Arlington , Texas.

Contractor: Reinhausen Manufacturing Inc.

By: _____
(Signature)

Title: President

EXHIBIT "A"

SCOPE OF SERVICES

- The Load Tap Changer Replacement, Substation Transformer Testing and Instrumentation Upgrade Proposal
- RMV-II Load Tap Changer Training Plan
- Certificates of Liability Insurance and Endorsements
- Load Tap Changer and Motor Drive dimensional drawing
- Transformer testing and condition assessment schedule
- LTC replacements schedule including HV bushings replacements
- Certificates and ID numbers

Reinhausen

SCOPE OF SERVICES - QUOTATION

ATTENTION: City of Riverside Public Utilities
3750 University Street, 3rd Floor
Riverside, CA 92501

REFERENCE: **Load Tap Changer (LTC) Replacement, Substation Transformer Testing and Instrumentation Upgrade**

VENDOR: REINHAUSEN MANUFACTURING
2549 North 9th Avenue
Humboldt, Tennessee 38343

ORGANIZATION: Corporation
Bernhard Kurth (President)
(731) 784-7681

BID NOTIFICATION: **RFP 1534**

TRANSFORMER DATA:

1. La Colina T-3 (HKP, 18/24 MVA @ 55, 1985 S#-E72380285)
2. Hunter T-5 (HKP, 18/24 MVA @ 55, 1987 S#-E73420587)
3. Freeman T-1 (Delta-Star, 18/24 MVA @ 55, 1990 S#-E75271290)
4. Freeman T-3 (Delta-Star, 18/24 MVA @ 55, 1988 S#-E74310389)
5. Freeman T-5 (HKP, 18/24 MVA @55, 1987 S#-E73430587)
6. Orangecrest T-1 (Delta-Star, 18/24 MVA @55, 1989 S#-E74611089)
7. University T-3 (Delta-Star, 18/24 MVA@ 55, 1990 S#-E75261290)
8. Springs T-1 (Delta-Star, 18/24 MVA@ 55, 1989 S#-E74300289)
9. Riverside T-3 (HKP, 18/24 MVA@ 55, 1985 S#-72390285)

Existing LTC: ALLIS CHALMERS TLH 21

Reinhausen

TURNKEY LTC RETROFIT PROPOSAL

REINHAUSEN MANUFACTURING (RM) proposes to provide per our engineering review of this project, all non-union labor, along with Subcontractor Nunez Welding Precision and Substation Services Company, crew and equipment necessary to perform Transformer Testing and Condition Assessments as well as LTC Retrofits on 9 transformers. The retrofits consist of removing the existing TLH 21 LTC and replacing it with a LTC Type RMV-II-1500-15 per specification together with a MD-III Motor Drive unit (Tapcon 250 controller included). This proposal also includes the replacement of the existing Preventative Auto in all 9 transformers with a new 4-lead Preventative Auto transformer and the replacement of the HV Bushings on 4 of the Transformers.

RM General Responsibilities:

1. Provide new RMV-II and MD-III with Tapcon 250 controller for 9 transformers
2. Provide new HV bushings (per RFP) for 4 transformers
3. Provide new Messko devices requested (per RFP) for 9 transformers
4. Provide all gaskets needed
5. Conduct daily Safety Tailboard meeting with RPU site supervisor.
6. Identify site hazards.
7. Verify Nameplate data for project logistics.
8. Provide all lifting equipment and rigging.
9. Provide vacuum processing equipment, oil storage tanker.
10. Provide all testing of the 9 transformers before and after retrofit
11. Perform all internal work.
12. Perform all welding services.
13. Provide certified welder with a minimum of 5 years direct experience on LTC removal.
14. Provide certified Fire Watch and adequate fire extinguishers.
15. Provide Motor Drive unit Point-to-Point wiring diagrams.
16. Provide list of calibrated test equipment.
17. Maintain engineering liaison on project status with RPU Responsible Engineer.

Customer's Responsibilities:

1. Provide results of Transformer Health Assessment survey conducted on all 9 transformers.
2. Establish productive relationship with Vendor for a successful project.
3. Conduct daily Safety Meeting with Vendor.
4. Provide Non-PCB report and copy of latest electrical tests and oil sample DGA results.
5. Transformer is fit for duty as determined by RPU.
6. Provide clear and easy access to the transformer.
7. De-energize unit and open switches on both ends, lock/tag-out and provide visible grounds.
8. Provide all manuals, one-line drawing, wiring schematics and control drawings.
9. RPU to have a Qualified Electrical Worker tech on site full time as site supervisor.
10. RPU to provide disposal of oil waste, existing ltc oil, and Old HV bushings
11. Conduct Witness Hold points.

RPU Witness Hold Points:

To ensure compliance with project requirements, Witness Hold Points shall be conducted by RPU Responsible Engineer (RE):

A. Identify vendor staff responsible for Project Lead, Team Lead and Fire-Watch
B. Verify certifications for Fire Watch Officer, LTC Welder and Transformer Test Engineer
C. Review the submitted list of calibrated equipment to be used on the project.
D. Verify equipment calibration stickers are applied to all electrical test instruments or torque wrenches and that the time stamp demonstrates compliance; non-compliance items shall be rejected and be sent out for calibration.
E. Review all test data including all factory acceptance test data for PA.
F. Verify a LTC Point-to-Point Template is filled out by the vendor, based the OEM backboard terminal assignment; must be provided before any electrical leads to old LTC is cut off.
G. Verify and approve the method for identifying/marking the old LTC leads.
H. Verify computation for estimation for the number of tanks for projected consumption of N2 usage for purging gas.
I. Verify compliance of Dry N2 gas tanks Dew Point is rated less than -50ºC.
J. Verify with Fire-Watch that Foreign Material Exclusion (FME) procedures are adequate to protect the transformer and personnel.
K. Verify with Safety Officer the constant flow of Dry Air when inside work is performed in the Main Tank.
L. Verify the transformer sits for at least 12 hours with Dry Air before the Dew Point is taken; compare to graph.
M. Verify Dew Point compliance from Oil Processing Log.
N. Verify the supplied oil (barrels or tanked) should be certified for less than 20 ppm; typically.
O. Verify from the Oil Processing Log that the processed inlet oil for the transformer is heated to 65ºC (+/- 5ºC) and held within that temperature range, to keep the oil free of moisture but is not to cause damage from excessive heat.
P. Verify supplied oil shall be processed a minimum of two (2) passes for a 69 KV transformer.
Q. The processed oil the ppm reading should change from 100 ppm of H2O to less than 10 ppm of H2O; per the Oil Processing Log.

Item-1: Transformer Testing and Condition Assessment

TRANSFORMER ON-LINE TESTS

1. Review Operating History
2. Nameplate Data Verify
3. Oil Sample for DGA
4. Physical Inspection (from ground level)

TRANSFORMER OFF-LINE TESTS

1. 3-Phase DC Winding Resistance testing (winding-to-winding and each winding-to-ground. Winding-to-winding tests shall be performed for each combination of high and low voltage).
2. Core insulation resistance.
3. Polarization index.
4. 3-Phase TTR (at all no-load tap-changer positions and load tap-changer positions).
5. Winding and Bushing power factor/dissipation-factor

6. Excitation current tests.
7. Sweep Frequency Response Analysis (SFRA).
8. 3-Phase Dynamic Resistance Measurement (DRM) with DV Power test equipment for LTC testing (model #TWA40D shall be used)

Item-2: Technical Requirements for LTC Retrofits

Work Scope

1. Mobilize to site
2. Perform Pre-Job Brief to Identify Hazards
3. Stage Lift, Oil Processor and Work Trucks
4. Perform the following tests, pre-work
    - TTR (Vanguard or equal) for TTR-1 reading
    - Power Factor (Doble M4000 or equal)
    - Core megger
    - Excitation
5. Drain Main Tank Oil – Follow down with Dry Air (-50C dew point) and place into clean & dry oil containment provided by RM.
6. Drain LTC and place this Oil into separate oil containment for disposal by others.
7. Perform Internal Inspection on Transformer, Inspecting LTC leads and LTC Board
8. Tag & Remove LTC Leads from back of Board
9. Install Temporary Barrier Board in prep for LTC Removal to protect against external contamination
10. Remove Dry Air and Replace with Dry Nitrogen in Prep for LTC Removal
11. Remove TLH 21 and existing PA then Replace with new PA
12. Cut opening as needed on tank wall then weld manufactured Adaptor and RMV II
13. Perform internal work of extending leads as needed then reconnect accordingly per new designated terminal points.
14. Install and wire new MD-III cabinet
15. Perform TTR(2) and Compare to TTR(1)
16. Perform all re-gasketting of transformer radiators, bushings, and new accessories.
17. Perform HV bushings replacement on the units required per RFP
18. Perform Dew point to insure that unit is dry.
19. Perform Vacuum and Vacuum Filling as per these Requirements:
    - Vacuum time established by OEM and Open Time.
    - Open Time (OT) shall be defined as the start time (t = 0 hours) for when the bottom of the coil is completely exposed to atmospheric air and oil leaches out of the insulation.
    - Vacuum strength shall be held at 1 Torr (where 760 Torr = 1 Atmosphere = 15 psi pressure).
    - Vacuum Time (VT) shall begin only after 2 Torr pressure has been achieved, and not before. Failure to adhere to these protocols shall mandate testing to restart.
    - Westinghouse standard shall be applied for Vacuum Time (VT), in hours
    - VT = 8 hrs + OT/8
20. Vacuum fill transformer while maintaining a vacuum level of 5 TORR or Less

21. Break Vacuum then top off Main Tank with new oil (if needed Customer to supply) to required level per nameplate & Circulate Oil Through Degasser 2 PASS
22. Oil Fill New LTC with New Oil
23. Perform Final Testing per spec– plus RM Commissioning Engineer to Site to Perform Special RMV Internal Inspection & Testing per RM Standards.
24. Perform Final Testing as required per RFP

Item-3: Ecilpse Monitoring System

Deleted per Addendum No-1

Item-4: Replacement of High-Side Bushings

Replace existing high-side bushings for transformers with new PCORE Electric bushings or approved equal.

1. Freeman T-5
2. Hunter T-5
3. La Colina T-3
4. Riverside T-3

Item-5: Provide 1 set of following spare parts

a. Complete Gasket Set (Transformer & LTC) QTY 2
b. LTC Neutral Stationary Contact QTY 2
c. LTC Main Stationary Contact QTY 16
d. LTC Main Moving Contact QTY 32
e. LTC Reversing Contact Finger Assembly QTY 2
f. LTC Reversing Contact Right Hand QTY 2
g. LTC Reversing Contact Left Hand QTY 2
h. LTC Motor with Capacitor QTY 2
i. LTC Controller Tapcon250 QTY 2

Item-6: Miscellaneous

Budget for $5,000 per transformer for potential miscellaneous repair or replacement parts that could be identified during the internal inspection of the transformer. No work will commence without a written approval by RPU's project manager.

Notes:

1. All vacuum processing quoted based on ambient temperature being above 10 Celsius. If additional circulation time is required, this time will be billed at the appropriate rates after agreement with customer. Price does not include any preheating or dry-out of unit prior to oil fill.
2. Prices do not include Special Labor, Site Specific Safety Training and/or City of Riverside Un-Specific Work Scope Requirements for this type of work. If there are any other specific requirements, please forward and we can review.

4. Working 14 hours per day, seven days per week during erection and working 24 hour shifts during processing. Extra time, such as safety training, will be billed at the appropriate crew and equipment rates.
5. Delays beyond the control of RM, including weather, will be billed at appropriate crew and equipment rates.
6. RM or its contractors are not responsible for any underground utilities, driveways, landscapes, curbing and asphalt parking lots. Equipment is very heavy and may damage these areas. MR recommends the appropriate surveys be performed prior to start of work.
7. Purchaser shall provide communication and sanitation facilities
8. Purchaser shall provide drum and dispose of all waste, flush and scrap oil generated in execution of the project.
9. No Provisions have been made for Secondary Oil Containment as may be required for compliance to local site programs or can be provided by others.

Item-1: Transformer Testing and Condition Assessment Price Per Transformer

1.	T-3 at La Colina Sub.	Price: US$ 21,060.00
2.	T-1 at Orangecrest Sub.	Price: US$ 21,060.00
3.	T-5 at Hunter Sub.	Price: US$ 21,060.00
4.	T-1 at Freeman Sub.	Price: US$ 21,060.00
5.	T-3 at Freeman Sub.	Price: US$ 21,060.00
6.	T-5 at Freeman Sub.	Price: US$ 21,060.00
7.	T-3 at University Sub.	Price: US$ 21,060.00
8.	T-1 at Springs Sub.	Price: US$ 21,060.00
9.	T-3 at Riverside Sub.	Price: US$ 21,060.00

Item-2: LTC Retrofit Price Per Transformer

1.	T-3 at La Colina Sub.	Price: US$ 259,948.00
2.	T-1 at Orangecrest Sub.	Price: US$ 259,948.00
3.	T-5 at Hunter Sub.	Price: US$ 259,948.00
4.	T-1 at Freeman Sub.	Price: US$ 259,948.00
5.	T-3 at Freeman Sub.	Price: US$ 259,948.00
6.	T-5 at Freeman Sub.	Price: US$ 259,948.00
7.	T-3 at University Sub.	Price: US$ 259,948.00
8.	T-1 at Springs Sub.	Price: US$ 259,948.00
9.	T-3 at Riverside Sub.	Price: US$ 259,948.00

Item-4: Replacement of High-Side Bushings Price Per Transformer

1.	T-3 at La Colina Sub.	Price: US$ 21,420.00
2.	T-5 at Hunter Sub.	Price: US$ 21,420.00
3.	T-5 at Freeman Sub.	Price: US$ 21,420.00
4.	T-3 at Riverside Sub.	Price US$ 21,420.00

Item-5: Spare Parts listed and per quantities as described on page 4

1.	Complete Set	Price: US$ 39,024.00

Reinhausen

Item-6: Miscellaneous

1. Budgeting $5,000.00 Per Transformer Price: **$45,000.00**

TOTAL PRICE:	US$ 2,698,776.00
SALES TAX 8%:	US$ 215,902.08
TOTAL OFFER:	**US$ 2,914,678.08**

Lead Time: for retrofit components (LTC, Motor Drive, PA, bushings), 10 Weeks from receipt of Order

Project Time: The Professional Consultant Service Agreement with the City of Riverside shall be in effect through October 12, 2016 with expected completion of the scope of work within 200 days from Notice to Proceed date. Tentative project schedules for the Transformer Testing and Condition Assessment as well as for the LTC replacements are attached, assuming a December 1, 2015 starting date.

Schedule of Payments based upon Milestone Completion, net 30 days from invoice date

Milestone (1)	5%	upon completion of Transformer Testing & Assessment (9 total)
Milestone (2)	35%	upon completion & shipment of components (9-RMV-II & MD-III, PA's, bushings)
Milestone (3-11)	6%	upon completion of each retrofit Project (9 total) and Customer Acceptance
Milestone (12)	6%	3 months after Completion of the last transformer retrofit

Validity: 90 days from September 14, 2015. **Prices shown are valid for electronic payments via ACH.**

Warranty: 5 years on the RMV-II LTCs and MD-III Motor Drive units (incl. Tapcon 250 and Messko devices), 1 year on labor, 1 year from the shipping date for the bushings

Other items included:

As part of the project package the following training is offered free of charge:

RMV II Training (please see attachment entitled "TRAINING PLAN – RMV".)
Price Value: **$6,000.00 for up to (4) people**
Note: This training will be free of charge if scheduled within 6 months of completion of the order. Travel expenses are not included and are the responsibility of City of Riverside

Automation Control Engineer
Price Value: **$8,500.00**
Note: This training to be scheduled with the 1st Retrofit, a 1 day of onsite training on the Tapcon 250 Controller.

Recommendation on Item 5 (Spare Parts):
We recommend to adjust the quantity of item d (LTC Main Moving Contact QTY 32) from 32 pieces down to 2 pieces. This results in a reduction of the Item 5 quotation price down to **$19,035.00** (before taxes).

OFFER NO: 10219760

Reinhausen

Insurance: The following certificates of liability insurance and endorsements showing the applicable limits of liability are provided as attachments to this quotation. The certificates show City of Riverside as an Additional Interest. The Endorsement changing the policy showing City of Riverside as Additional Insured Organization is attached as well.

- Commercial General Liability
- Umbrella Liability
- Professional Liability / Errors & Omissions
- Automobile Liability
- Workers Compensation and Employer's Liability
- Evidence of Property Insurance (Installation Floater, Builder's Risk)

Your business is very important to us and we will always make every effort to earn your continued confidence and goodwill. Please let us know if additional information is required. We look forward to hearing from you soon.
Best Regards,

Bernhard Kurth
President
Reinhausen Manufacturing Inc.
Humboldt, Tennessee

cc: Luis Chadinha RM Project Manager
Jim Gerut RM Area Sales manager

Reinhausen Manufacturing Inc.
2549 North 9th Avenue
Humboldt, Tennessee 38343, U.S.A.

Phone +1 731 784 7681
Fax +1 731 784 7682
www.reinhausen.com

Reinhausen

RMV II TRAINING PLAN

RMV Training

The agenda for the RMV training class is flexible to move at the pace of the individuals of the class. The students will get a shop tour as this is a vital part of the training that demonstrates the precise engineering that is evident throughout our manufacturing and assembly process. Our Senior Technicians not only work in the field but also instruct our training classes. This ensures that each student is provided the opportunity to discuss and receive answers from an expert on the RMV tap changers.

With our Training RMV, our students will be given the opportunity to remove and rebuild parts of the tap changer under the direct supervision of our qualified technician.

For the on-site training, RM will provide actual tap changers such that students can be given the opportunity to actually "work" with the parts and sub-assemblies while witnessing the actions of the motor drive and other integral parts.

Schedule

- Monday Travel
- Tuesday Class 8:00 am until 4:00 pm
- Wednesday Class 8:00 am until 4:00 pm
- Thursday Class 8:00 am until 4:00 pm
- Friday Travel

Motor Drive Unit

- MDIII
- Cam Switch Assembly
- Wiring connections
- Motor and capacitors
- Gearbox
- Hand Crank Safety Switch
- Position Indicator

Monitoring System

- VIM System Yellow Light Alarm – lockout
- VIM System Red Light Alarm – lockout
- VIM System Monitoring Board Operation
- VIM System Maintenance Mode

Reinhausen Manufacturing Inc.
2549 North 9th Avenue
Humboldt, Tennessee 38343, U.S.A.
Phone +1 731 784 7681
Fax +1 731 784 7682
www.reinhausen.com

- VIM System Monitoring Board reset
- VIM System Components and function
- VIM System Light Pipes (fiber Optic)
- VIM System Light Emitters and Light Receivers
- CTs
- Junction Plate
- Monitoring Board Cable

Spider Assembly

- Operation and function
- Mechanical End Stop

Selector Switch

- Operation/function
- Component identification (for different current ratings)

Reversing Switch

- Operation
- Different Functions (standard/coarse fine)

Bypass Assembly

- Operation
- Vacuum Bottle
- Timing
- Bypass contacts (on back of assembly)

Other

- Test Floor observation of procedures
- All production areas overview/tour
- Shipping the RMV tap changer and motor drive
- Maintenance
- Inspections
- Overall operation and functionality

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 08/27/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER

Pavenstedt & Pauli (USA), Inc.
301 South Mill Street
P.O. Box 968
Lexington KY 40588

CONTACT NAME: James Falkenstine
PHONE (A/C, No, Ext): 859-254-5388 FAX (A/C, No): 859-252-8658
E-MAIL ADDRESS: jfalkenstine@pavenstedt.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: HDI - Gerling America Insurance Company	41343
INSURER B: Maxim Indemnity Company	26743
INSURER C:	
INSURER D:	
INSURER E:	
INSURER F:	

INSURED

REINHAUSEN MANUFACTURING, INC.
2549 North 9th Avenue
Humboldt TN 38343

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC OTHER:	Y	Y	GLD-10657-08	01/01/2015	01/01/2016	EACH OCCURRENCE	$	1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$	100,000
							MED EXP (Any one person)	$	5,000
							PERSONAL & ADV INJURY	$	1,000,000
							GENERAL AGGREGATE	$	2,000,000
							PRODUCTS - COMP/OP AGG	$	1,000,000
								$	
	AUTOMOBILE LIABILITY [ ] ANY AUTO [ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS [ ] HIRED AUTOS [ ] NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident)	$	
							BODILY INJURY (Per person)	$	
							BODILY INJURY (Per accident)	$	
							PROPERTY DAMAGE (Per accident)	$	
								$	
A	[X] UMBRELLA LIAB [X] OCCUR EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [X] RETENTION $ 100,000			CUD-10658-08	01/01/2015	01/01/2016	EACH OCCURRENCE	$	9,000,000
							AGGREGATE	$	9,000,000
								$	
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [ ] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A					PER STATUTE / OTH-ER		
							E.L. EACH ACCIDENT	$	
							E.L. DISEASE - EA EMPLOYEE	$	
							E.L. DISEASE - POLICY LIMIT	$	
B	Professional Liability / Errors & Omissions			PFP-6025886-01	01/16/2015	01/16/2016	Each Occurrence		$1,000,000
							Aggregate		$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

The City of Riverside, its Officers, Officials, Employees and Volunteers are named additional insured on the General Liability Coverage as regards products/services provided by the Insured. Waiver of Subrogation is included. Coverage is Primary and Non-Contributory. 30 Day Notice of Cancellation is included.

CERTIFICATE HOLDER

City of Riverside
Purchasing Division
3900 Main Street
Riverside CA 92522

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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Client#: 1114507 REINHMAN

ACORD # CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 8/27/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
USI Ins Svcs C/L Lexington
220 Lexington Green Circle, Suite 410
Lexington, KY 40503

CONTACT NAME: Beverly Reynolds
PHONE (A/C, No, Ext): 859 317-6950 FAX (A/C, No): 8593176939
E-MAIL ADDRESS: beverly.reynolds@usi.biz

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Employers Insurance Company of	21458
INSURER B :	
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Reinhausen Manufacturing, Inc
2549 N 9th Avenue
Humboldt, TN 38343-1717

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	GENERAL LIABILITY							
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	CLAIMS-MADE / OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	POLICY / PRO-JECT / LOC						PRODUCTS - COMP/OP AGG	$
								$
A	AUTOMOBILE LIABILITY			AS6Z91425557	01/01/2015	01/01/2016	COMBINED SINGLE LIMIT (Ea accident)	$2,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS / X NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB / OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB / CLAIMS-MADE						AGGREGATE	$
	DED / RETENTION $							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			WCCZ91425557	01/01/2015	01/01/2016	X WC STATU-TORY LIMITS / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N N	N/A					E.L. EACH ACCIDENT	$1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$1,000,000
							E.L. DISEASE - POLICY LIMIT	$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

City of Riverside, its officers, officials, employees and volunteers are named as Additional Insured as regards products/services provided by the INSURED in regard to the Auto Liability listed above. Coverage is Primary and Non-Contributory. Waiver of Subrogation to the benefit of the certificate holder applies. 30 Day Notice of Cancellation applies.

CERTIFICATE HOLDER

City of Riverside/Purchasing Division
3900 Main St.
Riverside, CA 92522

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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BJRFB

EVIDENCE OF PROPERTY INSURANCE

DATE (MM/DD/YYYY): 08/27/2015

THIS EVIDENCE OF PROPERTY INSURANCE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE ADDITIONAL INTEREST NAMED BELOW. THIS EVIDENCE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS EVIDENCE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE ADDITIONAL INTEREST.

AGENCY
Pavenstedt & Pauli (USA), Inc.
301 South Mill Street
P.O. Box 968
Lexington KY 40588

PHONE (A/C, No, Ext): 859-254-5388
FAX (A/C, No): 859-252-8658
E-MAIL ADDRESS: jfalkenstine@pavenstedt.com
CODE:
SUB CODE:
AGENCY CUSTOMER ID #:

COMPANY
HDI - Gerling America Insurance Company
161 North Clark Street
48th Floor
Chicago IL 60601

INSURED
REINHAUSEN MANUFACTURING, INC.
2549 North 9th Avenue
Humboldt TN 38343

LOAN NUMBER:
POLICY NUMBER: CPD-11732-04
EFFECTIVE DATE: 01/01/2015
EXPIRATION DATE: 01/01/2016
☐ CONTINUED UNTIL TERMINATED IF CHECKED
THIS REPLACES PRIOR EVIDENCE DATED:

PROPERTY INFORMATION

LOCATION/DESCRIPTION
Industrial Electrical Equipment to be installed by the Insured on the Certificate Holder's Property

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS EVIDENCE OF PROPERTY INSURANCE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

COVERAGE INFORMATION

COVERAGE / PERILS / FORMS	AMOUNT OF INSURANCE	DEDUCTIBLE
Installation Floater (Builder's Risk) / Broad Form Perils / Replacement Cost Valuation / 80% Co-Insurance	$2,500,000.00	$1,000.00

REMARKS (Including Special Conditions)

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

ADDITIONAL INTEREST

NAME AND ADDRESS
City of Riverside
Purchasing Division
3900 Main Street
Riverside CA 92522

☐ MORTGAGEE
☐ LOSS PAYEE
☐ ADDITIONAL INSURED
☒ Owner of Project

LOAN #

AUTHORIZED REPRESENTATIVE
AS PROPOSED

ACORD 27 (2009/12)

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – DESIGNATED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s): **City of Riverside**
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your acts or omissions or the acts or omissions of those acting on your behalf:

1. In the performance of your ongoing operations; or
2. In connection with your premises owned by or rented to you.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

© Insurance Services Office, Inc., 2012

Endorsement number 1 for policy number AS6-Z91-425557-015

Named Insured Reinhausen Manufacturing, Inc

This endorsement is effective 01/08/2015 and will terminate with the policy. It is issued by the company designated in the Declaration. All other provisions of the policy remain unchanged.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

Change Endorsement

PREMIUM ADJUSTMENT

It is agreed the policy is amended to add the attached endorsement.

Effective 01/08/2015

Issued: The First Liberty Insurance Corp.

Policy Number **AS6-Z91-425557-015**

FORMS INVENTORY

COVERAGE FORMS PARTS AND ENDORSEMENTS FORMING A PART OF THIS POLICY AT INCEPTION:
Listed below are possible coverage forms and the states in which they apply.
CA 00 01 03 06 FL, HI, VA
CA 00 01 03 10 AK, MA, NY
CA 00 01 10 13 AL, AR, AZ, CA, CO, CT, DC, DE, GA, GU, IA, ID, IL, IN, KS, KY, LA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NV, OH, OK, OR, PA, PR, RI, SC, SD, TN, TX, UT, VI, VT, WA, WI, WV, WY

Form Number	Form Description	Applicable to Coverage Form
IC9999 10-11	Change Endorsement	
ACS 00 26 04 13	Forms Inventory	
AC 84 23 08 11	Designated Insured - Noncontributing	

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Policy Number: AS6-Z91-425557-015
Issued by: The First Liberty Insurance Corp.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED INSURED - NONCONTRIBUTING

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM
GARAGE COVERAGE FORM
MOTOR CARRIERS COVERAGE FORM
TRUCKERS COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by this endorsement.

This endorsement idertifies person(s) or organization(s) who are "insureds" under the Who Is An Insured Provision of the Coverage Form. This endorsement does not alter coverage provided in the Coverage form.

Schedule

Name of Person(s) or Organizations(s):
City of Riverside
Purchasing Division
3900 Main St.
Riverside, CA 92522

Regarding Designated Contract or Project:

Each person or organization shown in the Schedule of this endorsement is an "insured" for Liability Coverage, but only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured Provision contained in Section II of the Coverage Form.

The following is added to the **Other Insurance Condition:**

If you have agreed in a written agreement that this policy will be primary and without right of contribution from any insurance in force for an Additional Insured for liability arising out of your operations, and the agreement was executed prior to the "bodily injury" or "property damage", then this insurance will be primary and we will not seek contribution from such insurance.

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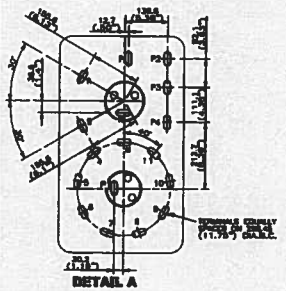
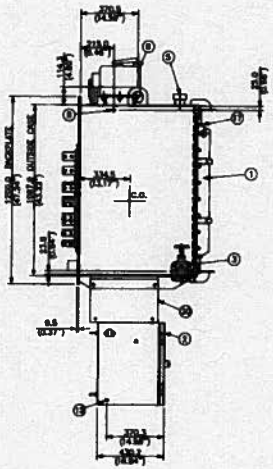
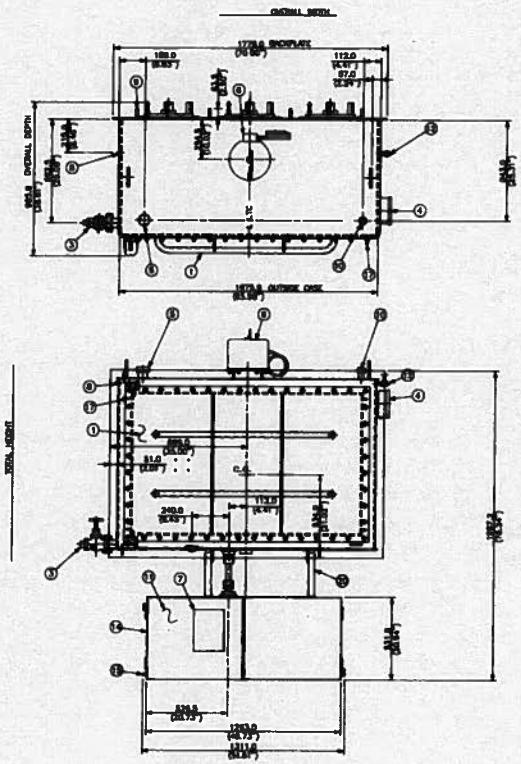
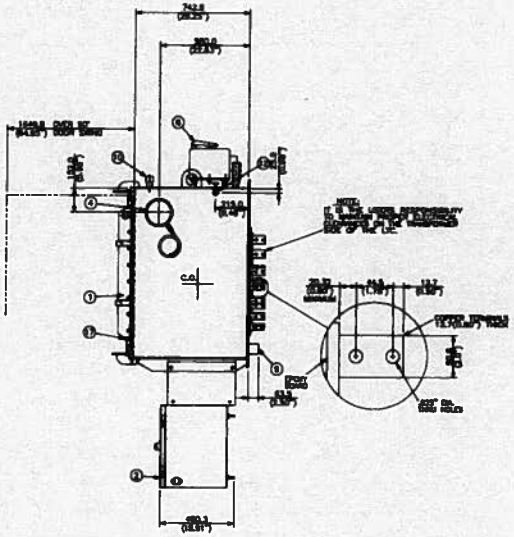
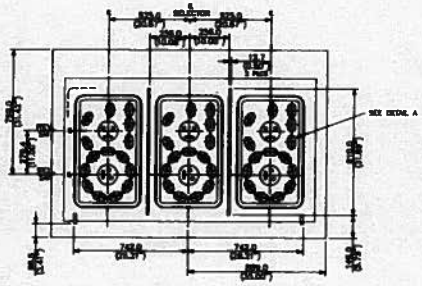










APPROXIMATE NET WEIGHTS:

CASE AND SWITCHES	990 KG. (2,182 LBS.)
OIL---1,014 LITERS (268 GALS)	912 KG. (2,010 LBS.)
TOTAL (EXCLUDING MOTOR DRIVE)	1,902 KG. (4,192 LBS.)
MOTOR DRIVE	150 KG. (331 LBS.)

ITEMS	DESCRIPTION
1.	HINGED INSPECTION DOOR – SELECTOR AND VACUUM SWITCH.
2.	HINGED INSPECTION DOOR – 1 TOTAL – MOTOR DRIVE HOUSING.
3.	2.0" FLANGED (GLOBE) DRAIN VALVE WITH SAMPLING DEVICE (SHIP DETAIL).
4.	OIL GAUGE.
5.	2.0" VACUUM CAP.
6.	MESSKO PRESSURE RELIEF DEVICE WITH FLAG (SHIP DETAIL).
7.	TAP CHANGER POSITION INDICATOR.
8.	.25" COUPLING FOR DEHYDRATING BREATHER ASSEMBLY.
9.	SUPPORT LUG FOR WELDING TO TANK.
10.	1.0" OIL FILL CAP.
11.	HANDCRANK BOSS INSIDE MOTOR DRIVE HOUSING.
12.	.25" (GATE) VALVE FOR SPECIAL PURGING.
14.	MOTORDRIVE UNIT WITH MONITORING SYSTEM INCLUDED.
15.	GROUND STUD (.375"-16 x .50" DP FEMALE THD) FOR MOTOR DRIVE HOUSING – 1 TOTAL.
17.	INSPECTION DOOR GUIDE PINS (4 TOTAL).
20.	STANDARD MOUNTING PLATE FOR MD-III HOUSING

DIMENSIONS – MILLIMETERS (INCHES)

NOTE:
THIS OUTLINE DRAWING IS NOT TO BE REGARDED AS INDICATING THE EXACT DETAILS OF CONSTRUCTION.

0	S.O. 2019	ITC. CHANGE

PRINTS TO	
1	10
2	11
3	12
4	13
5	14
6	15
7	16
8	17
9	18

APPARATUS

VACUUM SWITCH LTC TYPE
RMV-II 600/2000-15/26.4
DIMENSIONAL ARRANGEMENT

REINHAUSEN

DIMENSIONS AS NOTED – SCALE NTS | REV.0 | STANDARD TOLERANCES: RS 1001

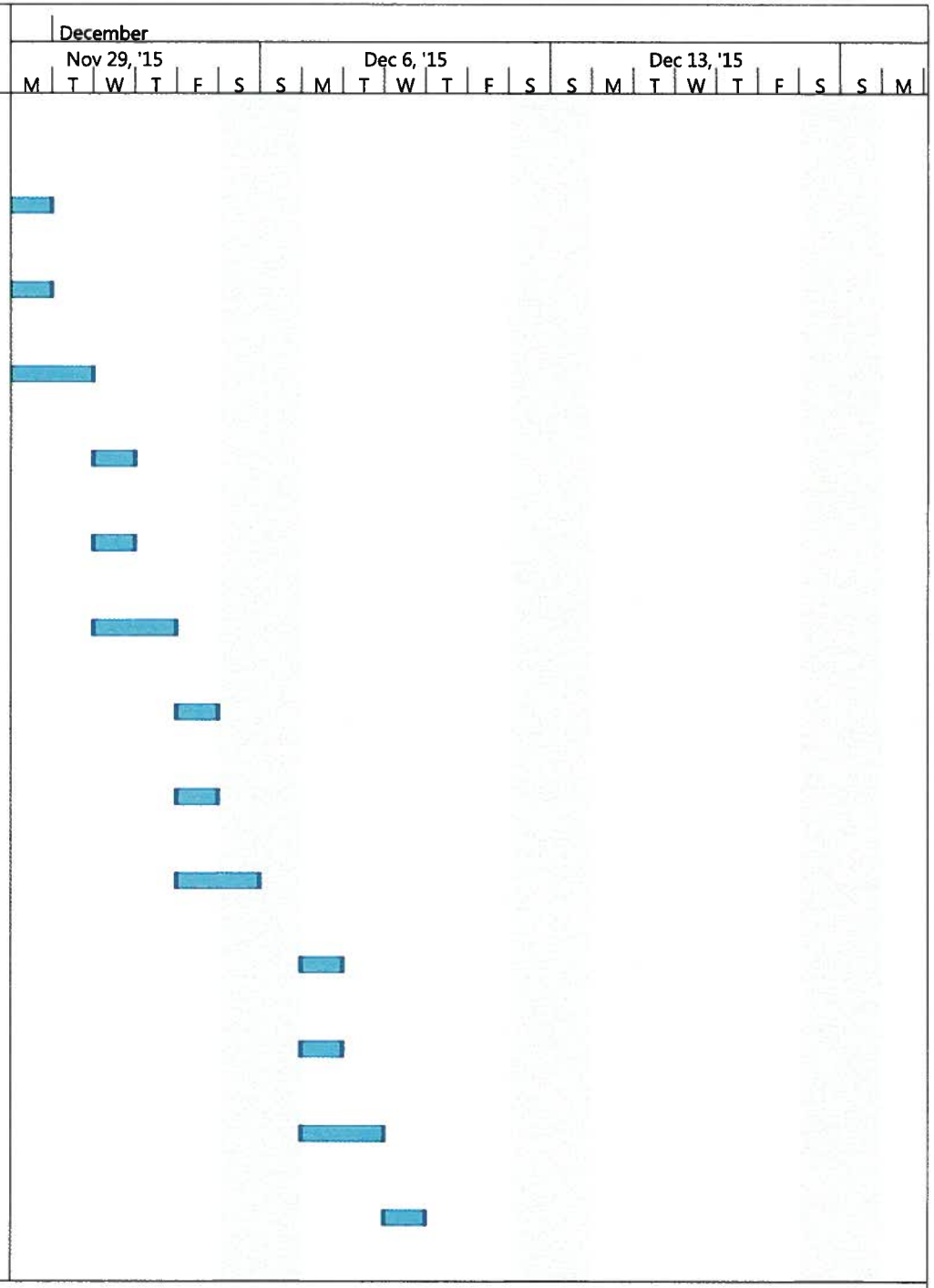
DFTR G. BINNION 8/23/14
CHKD
APPD

MASTER-200

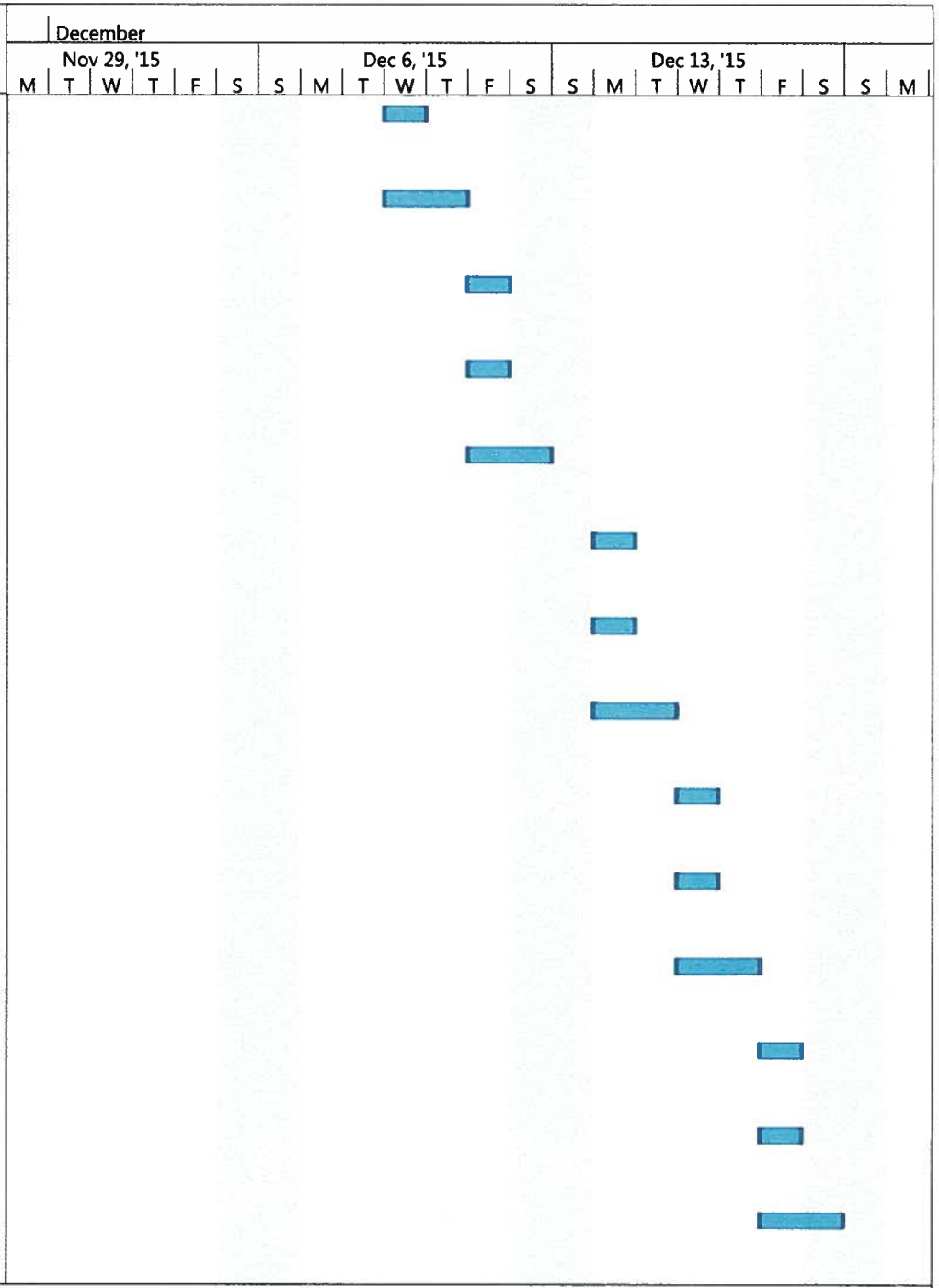
REINHAUSEN MANUFACTURING HUMBOLDT, TN.

THIS DWG. TO BE CHANGED ON GRAPHICS SYSTEM ONLY

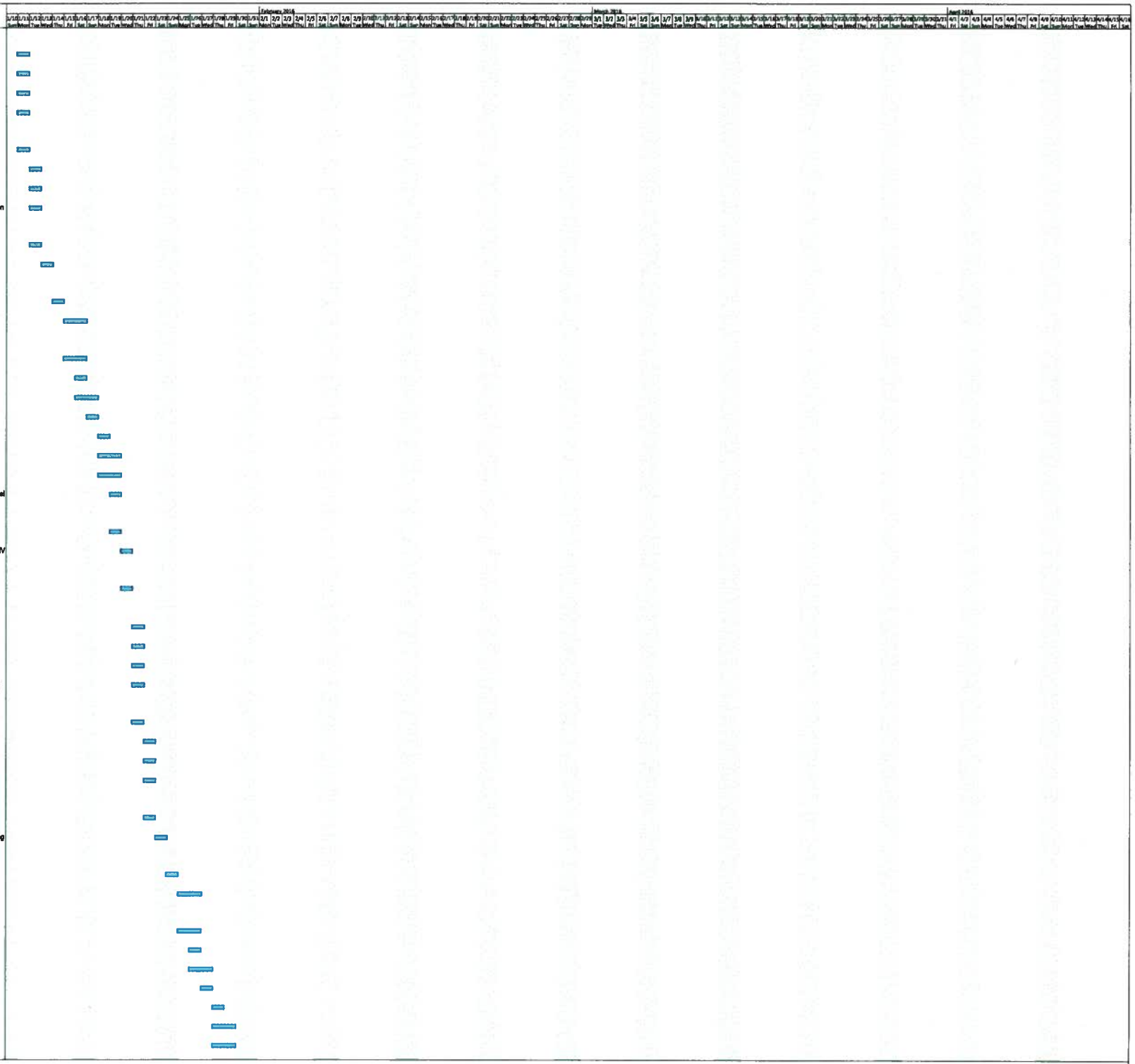
ID	Task Name
0	**Project- Transformer Testing and Condition Assesments Schedule for all 9 Units**
1	Mobilize to 1st site/job Brief
2	Data review/oil sampling/visual inspection
3	perform all online test
4	Mobilize to 2nd unit/Job brief
5	Data review/oil sampling/visual inspection
6	perform all online test
7	Mobilize to 3rd unit/Job brief
8	Data review/oil sampling/visual inspection
9	perform all online tests
10	Mobilize to 4th site/job Brief
11	Data review/oil sampling/visual inspection
12	perform all online test
13	Mobilize to 5th unit/Job brief



ID	Task Name
14	Data review/oil sampling/visual inspection
15	perform all online test
16	Mobilize to 6th unit/Job brief
17	Data review/oil sampling/visual inspection
18	perform all online tests
19	Mobilize to 7th site/job Brief
20	Data review/oil sampling/visual inspection
21	perform all online tests
22	Mobilize to 8th unit/Job brief
23	Data review/oil sampling/visual inspection
24	perform all online tests
25	Mobilize to 9th unit/Job brief
26	Data review/oil sampling/visual inspection
27	perform all online tests

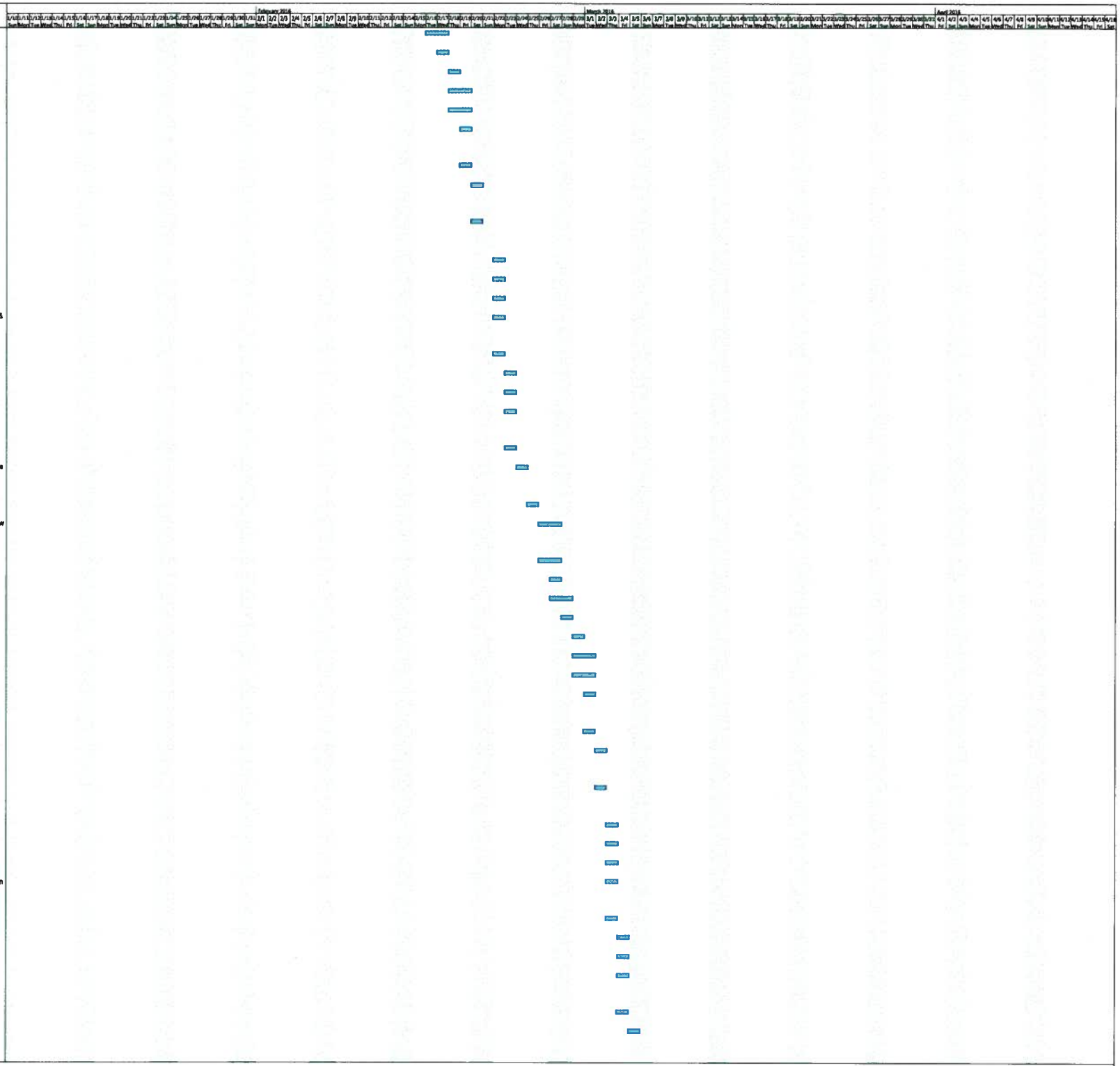


ID	Task Name
0	Project - Schedule per LTC retrofit
1	Mobilize to 1st site and Perform Pre-Job Brief to Identify Hazards
2	Stage Lift, Oil Processor and Work Trucks
3	Perform the following tests, pre-work
4	Drain Main Tank Oil – Follow down with Dry Air (-50C dew point) and place into clean & dry oil containment
5	Drain LTC and place this Oil into separate oil containment
6	Perform Internal Inspection on Transformer, Inspecting LTC leads and LTC Board
7	Tag & Remove LTC Leads from back of Board
8	Install Temporary Barrier Board in prep for LTC Removal to protect against external contamination
9	Remove Dry Air and Replace with Dry Nitrogen in Prep for LTC Removal
10	Remove and cut off TLH 21 and tank then cut off the top of PA compartment the remove existing PA then Replace with new PA and weld cover back on.
11	Cut opening as needed on tank wall then weld manufactured Adaptor and RMV II
12	Perform Internal work of extending leads as needed then reconnect accordingly per new designated terminal points.
13	Install and wire new MD-III cabinet
14	Perform TTR(2) and Compare to TTR(1)
15	Perform all regasketing of transformer radiators, bushings, and new accessories.
16	Perform HV bushings replacement on the units required per RFP
17	Perform Dew point to insure that unit is dry.
18	Perform Vacuum and Vacuum Filling as per these Requirements:
19	Vacuum fill transformer while maintaining a vacuum level of 5 TORR or Less
20	Break Vacuum then top off Main Tank with new oil (if needed Customer to supply) to required level per nameplate & Circulate Oil Through Degasser 2 PASS
21	Oil Fill New LTC with New Oil
22	Perform Final Testing per spec– plus RM Commissioning Engineer to Site to Perform Special RMV Internal Inspection & Testing per RM Standards.
23	Perform Final Testing as required per RFP
24	Project - Schedule per LTC retrofit
25	Mobilize to 2nd site and Perform Pre-Job Brief to Identify Hazards
26	Stage Lift, Oil Processor and Work Trucks
27	Perform the following tests, pre-work
28	Drain Main Tank Oil – Follow down with Dry Air (-50C dew point) and place into clean & dry oil containment
29	Drain LTC and place this Oil into separate oil containment
30	Perform Internal Inspection on Transformer, Inspecting LTC leads and LTC Board
31	Tag & Remove LTC Leads from back of Board
32	Install Temporary Barrier Board in prep for LTC Removal to protect against external contamination
33	Remove Dry Air and Replace with Dry Nitrogen in Prep for LTC Removal
34	Remove and cut off TLH 21 and tank then cut off the top of PA compartment the remove existing PA then Replace with new PA and weld cover back on.
35	Cut opening as needed on tank wall then weld manufactured Adaptor and RMV II
36	Perform Internal work of extending leads as needed then reconnect accordingly per new designated terminal points.
37	Install and wire new MD-III cabinet
38	Perform TTR(2) and Compare to TTR(1)
39	Perform all regasketing of transformer radiators, bushings, and new accessories.
40	Perform HV bushings replacement on the units required per RFP
41	Perform Dew point to insure that unit is dry.
42	Perform Vacuum and Vacuum Filling as per these Requirements:
43	Vacuum fill transformer while maintaining a vacuum level of 5 TORR or Less

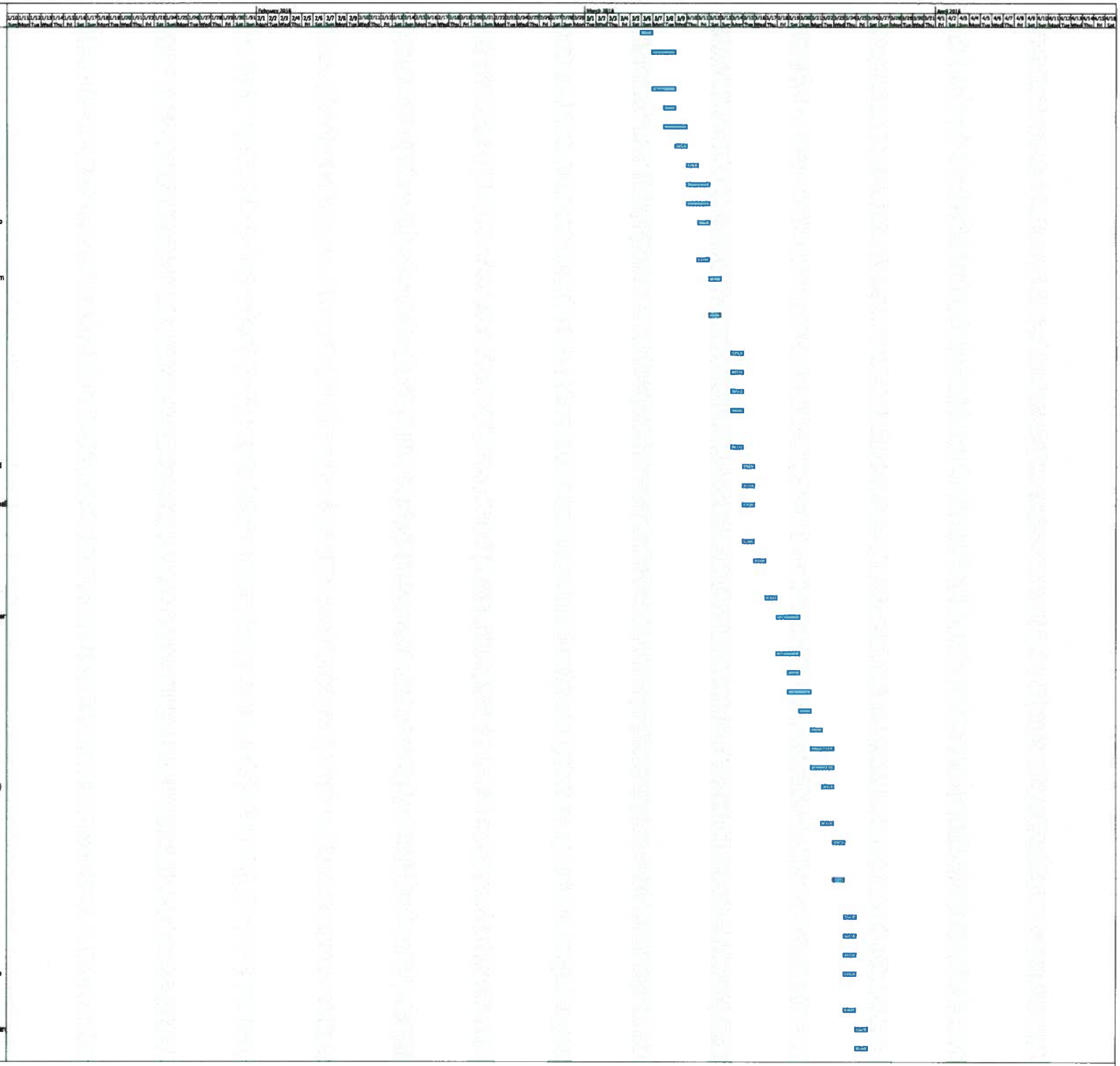


ID	Task Name
44	Break Vacuum then top off Main Tank with new oil (if needed Customer to supply) to required level per nameplate & Circulate Oil Through Degasser 2 PASS
45	Oil Fill New LTC with New Oil
46	Perform Final Testing per spec– plus RM Commissioning Engineer to Site to Perform Special RMV Internal Inspection & Testing per RM Standards.
47	Perform Final Testing as required per RFP
48	Project - Schedule per LTC retrofit
49	Mobilize to 3rd site and Perform Pre-Job Brief to Identify Hazards
50	Stage Lift, Oil Processor and Work Trucks
51	Perform the following tests, pre-work
52	Drain Main Tank Oil – Follow down with Dry Air (-50C dew point) and place into clean & dry oil containment
53	Drain LTC and place this Oil into seperate oil containment
54	Perform Internal Inspection on Transformer, Inspecting LTC leads and LTC Board
55	Tag & Remove LTC Leads from back of Board
56	Install Temporary Barrier Board in prep for LTC Removal to protect against external contamination
57	Remove Dry Air and Replace with Dry Nitrogen in Prep for LTC Removal
58	Remove and cut off TLH 21 and tank then cut off the top of PA compartment the remove existing PA then Replace with new PA and weld cover back on.
59	Cut opening as needed on tank wall then weld manufactured Adaptor and RMV II
60	Perform internal work of extending leads as needed then reconnect accordingly per new designated terminal points.
61	Install and wire new MD-III cabinet
62	Perform TTR(2) and Compare to TTR(1)
63	Perform all regasketing of transformer radiators, bushings, and new accessories.
64	Perform HV bushings replacement on the units required per RFP
65	Perform Dew point to insure that unit is dry.
66	Perform Vacuum and Vacuum Filling as per these Requirements:
67	Vacuum fill transformer while maintaining a vacuum level of 5 TORR or Less
68	Break Vacuum then top off Main Tank with new oil (if needed Customer to supply) to required level per nameplate & Circulate Oil Through Degasser 2 PASS
69	Oil Fill New LTC with New Oil
70	Perform Final Testing per spec– plus RM Commissioning Engineer to Site to Perform Special RMV Internal Inspection & Testing per RM Standards.
71	Perform Final Testing as required per RFP
72	Project - Schedule per LTC retrofit
73	Mobilize to 4th site and Perform Pre-Job Brief to Identify Hazards
74	Stage Lift, Oil Processor and Work Trucks
75	Perform the following tests, pre-work
76	Drain Main Tank Oil – Follow down with Dry Air (-50C dew point) and place into clean & dry oil containment
77	Drain LTC and place this Oil into seperate oil containment
78	Perform Internal Inspection on Transformer, Inspecting LTC leads and LTC Board
79	Tag & Remove LTC Leads from back of Board
80	Install Temporary Barrier Board in prep for LTC Removal to protect against external contamination
81	Remove Dry Air and Replace with Dry Nitrogen in Prep for LTC Removal
82	Remove and cut off TLH 21 and tank then cut off the top of PA compartment the remove existing PA then Replace with new PA and weld cover back on.
83	Cut opening as needed on tank wall then weld manufactured Adaptor and RMV II
84	Perform internal work of extending leads as needed then reconnect accordingly per new designated terminal points.
85	Install and wire new MD-III cabinet
86	Perform TTR(2) and Compare to TTR(1)

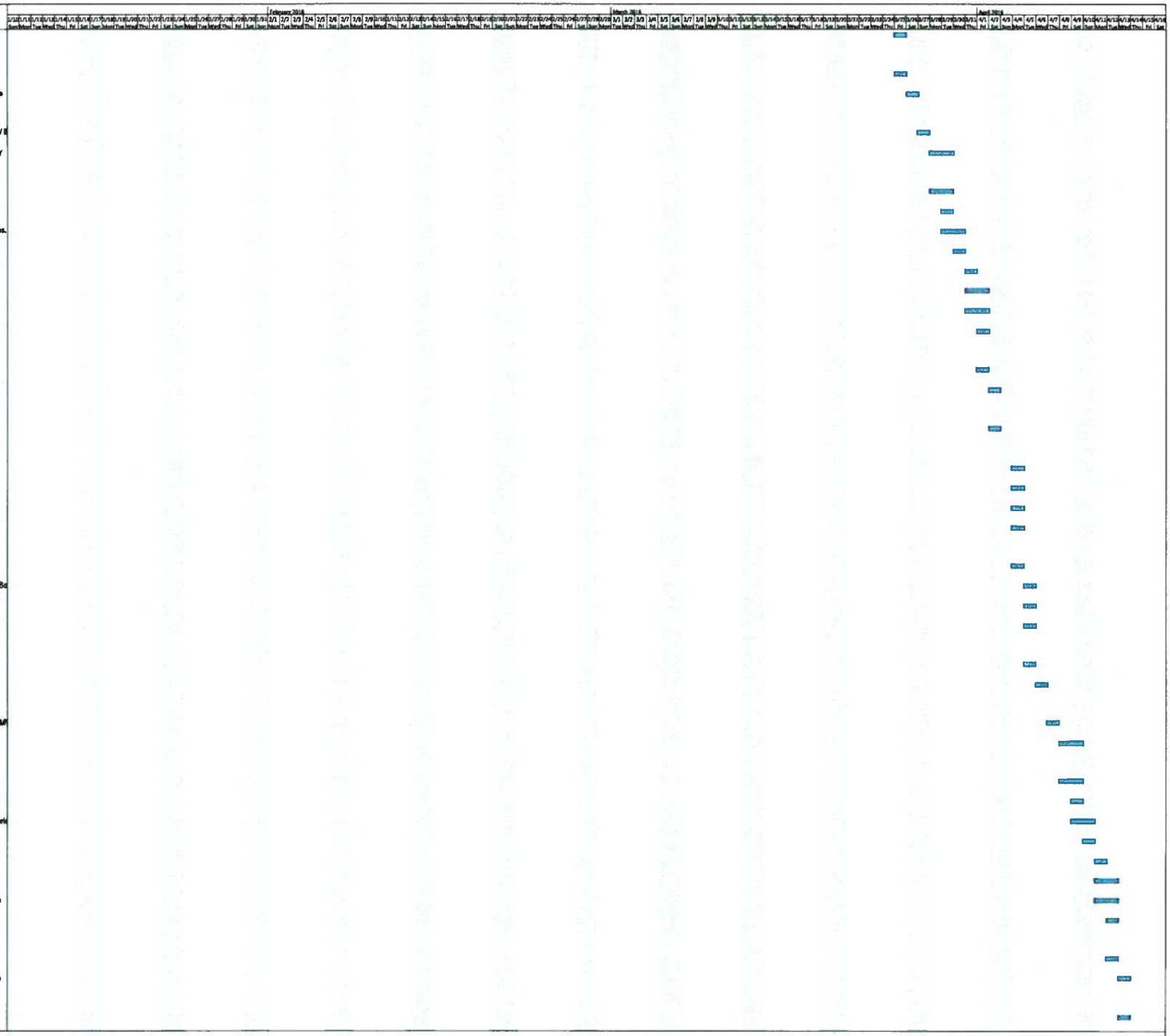
ID	Task Name
87	Perform all regasketing of transformer radiators, bushings, and new accessories.
88	Perform HV bushings replacement on the units required per RFP
89	Perform Dew point to insure that unit is dry.
90	Perform Vacuum and Vacuum Filling as per these Requirements:
91	Vacuum fill transformer while maintaining a vacuum level of 5 TORR or Less
92	Break Vacuum then top off Main Tank with new oil (if needed Customer to supply) to required level per nameplate & Circulate Oil Through Degasser 2 PASS
93	Oil Fill New LTC with New Oil
94	Perform Final Testing per spec– plus RM Commissioning Engineer to Site to Perform Special RMV Internal Inspection & Testing per RM Standards.
95	Perform Final Testing as required per RFP
96	Project - Schedule per LTC retrofit
97	Mobilize to 5th site and Perform Pre-Job Brief to Identify Hazards
98	Stage Lift, Oil Processor and Work Trucks
99	Perform the following tests, pre-work
100	Drain Main Tank Oil – Follow down with Dry Air (-50C dew point) and place into clean & dry oil containment
101	Drain LTC and place this Oil into separate oil containment
102	Perform Internal Inspection on Transformer, Inspecting LTC leads and LTC Board
103	Tag & Remove LTC Leads from back of Board
104	Install Temporary Barrier Board in prep for LTC Removal to protect against external contamination
105	Remove Dry Air and Replace with Dry Nitrogen in Prep for LTC Removal
106	Remove and cut off TLH 21 and tank then cut off the top of PA compartment the remove existing PA then Replace with new PA and weld cover back on.
107	Cut opening as needed on tank wall then weld manufactured Adaptor and RMV II
108	Perform internal work of extending leads as needed then reconnect accordingly per new designated terminal points.
109	Install and wire new MD-III cabinet
110	Perform TTR(2) and Compare to TTR(1)
111	Perform all regasketing of transformer radiators, bushings, and new accessories.
112	Perform HV bushings replacement on the units required per RFP
113	Perform Dew point to insure that unit is dry.
114	Perform Vacuum and Vacuum Filling as per these Requirements:
115	Vacuum fill transformer while maintaining a vacuum level of 5 TORR or Less
116	Break Vacuum then top off Main Tank with new oil (if needed Customer to supply) to required level per nameplate & Circulate Oil Through Degasser 2 PASS
117	Oil Fill New LTC with New Oil
118	Perform Final Testing per spec– plus RM Commissioning Engineer to Site to Perform Special RMV Internal Inspection & Testing per RM Standards.
119	Perform Final Testing as required per RFP
120	Project - Schedule per LTC retrofit
121	Mobilize to 6th site and Perform Pre-Job Brief to Identify Hazards
122	Stage Lift, Oil Processor and Work Trucks
123	Perform the following tests, pre-work
124	Drain Main Tank Oil – Follow down with Dry Air (-50C dew point) and place into clean & dry oil containment
125	Drain LTC and place this Oil into separate oil containment
126	Perform Internal Inspection on Transformer, Inspecting LTC leads and LTC Board
127	Tag & Remove LTC Leads from back of Board
128	Install Temporary Barrier Board in prep for LTC Removal to protect against external contamination
129	Remove Dry Air and Replace with Dry Nitrogen in Prep for LTC Removal
130	Remove and cut off TLH 21 and tank then cut off the top of PA compartment the remove existing PA then Replace with new PA and weld cover back on.



ID	Task Name
131	Cut opening as needed on tank wall then weld manufactured Adaptor and RMV II
132	Perform internal work of extending leads as needed then reconnect accordingly per new designated terminal points.
133	Install and wire new MD-III cabinet
134	Perform TTR(2) and Compare to TTR(1)
135	Perform all regasketing of transformer radiators, bushings, and new accessories.
136	Perform HV bushings replacement on the units required per RFP
137	Perform Dew point to insure that unit is dry.
138	Perform Vacuum and Vacuum Filling as per these Requirements:
139	Vacuum fill transformer while maintaining a vacuum level of 5 TORR or Less
140	Break Vacuum then top off Main Tank with new oil (if needed Customer to supply) to required level per nameplate & Circulate Oil Through Degasser 2 PASS
141	Oil Fill New LTC with New Oil
142	Perform Final Testing per spec– plus RM Commissioning Engineer to Site to Perform Special RMV Internal Inspection & Testing per RM Standards.
143	Perform Final Testing as required per RFP
144	Project - Schedule per LTC retrofit
145	Mobilize to 7th site and Perform Pre-Job Brief to Identify Hazards
146	Stage Lift, Oil Processor and Work Trucks
147	Perform the following tests, pre-work
148	Drain Main Tank Oil – Follow down with Dry Air (-50C dew point) and place into clean & dry oil containment
149	Drain LTC and place this Oil into separate oil containment
150	Perform Internal Inspection on Transformer, Inspecting LTC leads and LTC Board
151	Tag & Remove LTC Leads from back of Board
152	Install Temporary Barrier Board in prep for LTC Removal to protect against external contamination
153	Remove Dry Air and Replace with Dry Nitrogen in Prep for LTC Removal
154	Remove and cut off TLH 21 and tank then cut off the top of PA compartment the remove existing PA then Replace with new PA and weld cover back on.
155	Cut opening as needed on tank wall then weld manufactured Adaptor and RMV II
156	Perform internal work of extending leads as needed then reconnect accordingly per new designated terminal points.
157	Install and wire new MD-III cabinet
158	Perform TTR(2) and Compare to TTR(1)
159	Perform all regasketing of transformer radiators, bushings, and new accessories.
160	Perform HV bushings replacement on the units required per RFP
161	Perform Dew point to insure that unit is dry.
162	Perform Vacuum and Vacuum Filling as per these Requirements:
163	Vacuum fill transformer while maintaining a vacuum level of 5 TORR or Less
164	Break Vacuum then top off Main Tank with new oil (if needed Customer to supply) to required level per nameplate & Circulate Oil Through Degasser 2 PASS
165	Oil Fill New LTC with New Oil
166	Perform Final Testing per spec– plus RM Commissioning Engineer to Site to Perform Special RMV Internal Inspection & Testing per RM Standards.
167	Perform Final Testing as required per RFP
168	Project - Schedule per LTC retrofit
169	Mobilize to 8th site and Perform Pre-Job Brief to Identify Hazards
170	Stage Lift, Oil Processor and Work Trucks
171	Perform the following tests, pre-work
172	Drain Main Tank Oil – Follow down with Dry Air (-50C dew point) and place into clean & dry oil containment
173	Drain LTC and place this Oil into separate oil containment
174	Perform Internal Inspection on Transformer, Inspecting LTC leads and LTC Board
175	Tag & Remove LTC Leads from back of Board



ID	Task Name
176	Install Temporary Barrier Board in prep for LTC Removal to protect against external contamination
177	Remove Dry Air and Replace with Dry Nitrogen in Prep for LTC Removal
178	Remove and cut off TLH 21 and tank then cut off the top of PA compartment the remove existing PA then Replace with new PA and weld cover back on.
179	Cut opening as needed on tank wall then weld manufactured Adaptor and RMV II
180	Perform internal work of extending leads as needed then reconnect accordingly per new designated terminal points.
181	Install and wire new MD-III cabinet
182	Perform TTR(2) and Compare to TTR(1)
183	Perform all regasketing of transformer radiators, bushings, and new accessories.
184	Perform HV bushings replacement on the units required per RFP
185	Perform Dew point to insure that unit is dry.
186	Perform Vacuum and Vacuum Filling as per these Requirements:
187	Vacuum fill transformer while maintaining a vacuum level of 5 TORR or Less
188	Break Vacuum then top off Main Tank with new oil (if needed Customer to supply) to required level per nameplate & Circulate Oil Through Degasser 2 PASS
189	Oil Fill New LTC with New Oil
190	Perform Final Testing per spec– plus RM Commissioning Engineer to Site to Perform Special RMV Internal Inspection & Testing per RM Standards.
191	Perform Final Testing as required per RFP
192	Project - Schedule per LTC retrofit
193	Mobilize to 9th site and Perform Pre-Job Brief to Identify Hazards
194	Stage Lift, Oil Processor and Work Trucks
195	Perform the following tests, pre-work
196	Drain Main Tank Oil – Follow down with Dry Air (-50C dew point) and place into clean & dry oil containment
197	Drain LTC and place this Oil into separate oil containment
198	Perform Internal Inspection on Transformer, Inspecting LTC leads and LTC Bo
199	Tag & Remove LTC Leads from back of Board
200	Install Temporary Barrier Board in prep for LTC Removal to protect against external contamination
201	Remove Dry Air and Replace with Dry Nitrogen in Prep for LTC Removal
202	Remove and cut off TLH 21 and tank then cut off the top of PA compartment the remove existing PA then Replace with new PA and weld cover back on.
203	Cut opening as needed on tank wall then weld manufactured Adaptor and RMV
204	Perform internal work of extending leads as needed then reconnect accordingly per new designated terminal points.
205	Install and wire new MD-III cabinet
206	Perform TTR(2) and Compare to TTR(1)
207	Perform all regasketing of transformer radiators, bushings, and new accessorie
208	Perform HV bushings replacement on the units required per RFP
209	Perform Dew point to insure that unit is dry.
210	Perform Vacuum and Vacuum Filling as per these Requirements:
211	Vacuum fill transformer while maintaining a vacuum level of 5 TORR or Less
212	Break Vacuum then top off Main Tank with new oil (if needed Customer to supply) to required level per nameplate & Circulate Oil Through Degasser 2 PASS
213	Oil Fill New LTC with New Oil
214	Perform Final Testing per spec– plus RM Commissioning Engineer to Site to Perform Special RMV Internal Inspection & Testing per RM Standards.
215	Perform Final Testing as required per RFP



CITY OF RIVERSIDE RFP 1534

8/28/15

SERVICE

Reinhausen Manufacturing Identification numbers

- State of California Corporate ID #C3380716
- State of California Contractor License #969496
- Public Works Contractor (PWC) Registration #10000028302
  - This is the DIR registration.
- City of Riverside Business Tax Certificate #1236177

  - All licenses listed are active and registered with the appropriate agencies

State of California
Secretary of State

CERTIFICATE OF QUALIFICATION

I, DEBRA BOWEN, Secretary of State of the State of California, hereby certify that on the **10th day of May 2011**, **REINHAUSEN MANUFACTURING INC**, a corporation organized and existing under the laws of **Delaware**, complied with the requirements of California law in effect on that date for the purpose of qualifying to transact intrastate business in the State of California, and that as of said date said corporation became and now is qualified and authorized to transact intrastate business in the State of California, subject however, to any licensing requirements otherwise imposed by the laws of this State.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this day of May 31, 2011.

Debra Bowen

DEBRA BOWEN
Secretary of State

mlt

State Of California
CONTRACTORS STATE LICENSE BOARD
ACTIVE LICENSE

License Number 969496 Type CORP

Business Name REINHAUSEN MANUFACTURING INC

Classification(s) A

Expiration Date 01/31/2016 www.cslb.ca.gov

Legal Name	Registration Number	County	City	Registration Date	Expiration Date
REINHAUSEN MANUFACTURING INC.	1000028302	OUT OF STATE	HUMBOLDT	08/19/2015	06/30/2016

BUSINESS TAX CERTIFICATE

This certificate is issued for revenue purposes only and does not constitute a permit to operate a business. Renewal of this certificate is due no later than 60 days from the posted expiration date to avoid penalties. Failure to receive a renewal notice does not relieve the holder's responsibility to maintain a current certificate while conducting business in the City.

3900 Main Street
Riverside, CA 92522
(951) 826-5465
FAX (951) 826-2356

City of Arts & Innovation

BUSINESS NAME: REINHAUSEN MANUFACTURING, INC
BUSINESS LOCATION: 2549 N 9TH AVE
HUMBOLDT, TN 38343-1717
BUSINESS OWNER: REINHAUSEN MANUFACTURING, INC

REINHAUSEN MANUFACTURING, INC
2549 N 9TH AVE
HUMBOLDT, TN 38343-1717

Account No.: 1236177
Expiration Date: December 31, 2015
Business Type: CONTRACTOR
NAICS:

TO BE POSTED IN A CONSPICUOUS PLACE AT BUSINESS LOCATION • NOT TRANSFERABLE

EXHIBIT "B"

COMPENSATION

- Load Tap Changer Replacement, Substation Transformer Testing and Information Upgrade

  Cost break down

Appendix B
LOAD TAP CHANGER (LTC) REPLACEMENT, SUBSTATION TRANSFORMER TESTING AND INSTRUMENTATION UPGRADE
Cost Breakdown

Item Description	Units	Amount	Amount	Amount
Item 1: Transformer Testing and Condition Assessment				
			Taxes due in CA	**TOTAL**
Las Colina T-3	LS	$21,060.00	$1,684.80	$22,744.80
Orangecrest T-1	LS	$21,060.00	$1,684.80	$22,744.80
Hunter T-5	LS	$21,060.00	$1,684.80	$22,744.80
Freeman T-1	LS	$21,060.00	$1,684.80	$22,744.80
Freeman T-3	LS	$21,060.00	$1,684.80	$22,744.80
Freeman T-5	LS	$21,060.00	$1,684.80	$22,744.80
University T-3	LS	$21,060.00	$1,684.80	$22,744.80
Springs T-1	LS	$21,060.00	$1,684.80	$22,744.80
Riverside T-3	LS	$21,060.00	$1,684.80	$22,744.80
Item 2: Replacement for LTC, backboard and other Misc.				
La Colina T-3	LS	$259,948.00	$20,795.84	$280,743.84
Orangecrest T-1	LS	$259,948.00	$20,795.84	$280,743.84
Hunter T-5	LS	$259,948.00	$20,795.84	$280,743.84
Freeman T-1	LS	$259,948.00	$20,795.84	$280,743.84
Freeman T-3	LS	$259,948.00	$20,795.84	$280,743.84
Freeman T-5	LS	$259,948.00	$20,795.84	$280,743.84
University T-3	LS	$259,948.00	$20,795.84	$280,743.84
Springs T-1	LS	$259,948.00	$20,795.84	$280,743.84
Riverside T-3	LS	$259,948.00	$20,795.84	$280,743.84
Item 3: NA				
NA				
NA				
NA				
NA				
NA				
Item 4: Replace Hi-side bushings				
La Colina T-3	LS	$21,420.00	$1,713.60	$23,133.60
Hunter T-5	LS	$21,420.00	$1,713.60	$23,133.60
Freeman T-5	LS	$21,420.00	$1,713.60	$23,133.60
Riverside T-3	LS	$21,420.00	$1,713.60	$23,133.60
Item 5: Spares				
Spares	LS	$39,024.00	$3,121.92	$42,145.92
Item 6: MISC Repair and Parts				
Misc Repair and Parts	LS	$45,000.00	$3,600.00	$48,600.00
TOTAL COST	**0**	**$2,698,776.00**	**$215,902.08**	**$2,914,678.08**

For detailed schedule of payments please also refer to the **Schedule of Payments based upon Milestone Completion** in Exhibit A:
Milestone (1): 5% upon completion of Transformer Testing & Assessment (9 total)
Milestone (2): 35% upon completion & shipment of components (9-RMV-II & MD-III, PA's, bushings)
Milestone (3-11): 6% upon completion of each retrofit Project (9 total) and Customer Acceptance
Milestone (12): 6% 3 months after Completion of the last transformer retrofit

EXHIBIT "C"

KEY PERSONNEL

- Key personnel
- Project references

CITY OF RIVERSIDE - RFP 1534

REINHAUSEN MANUFACTURING INC
PERSONNEL

October 2015

RM – Bernhard Kurth

OPEN

Luis Chadinha

Luis Chadinha began his career with North American Transformers in 1994 as a Final Assembler in manufacturing of small, medium, and large power transformers. Through the years he also was a Journeyman Winder winding HV, LV, TV, and Tap winding coils. Then as a Journeyman Assembler, he assembled and disassembled internally and externally all transformers as required. By 1999 as a Journeyman Lead Man he oversaw all personnel in final assembly, planned and scheduled all final assembly work and was part of the lead team of quality and engineering.

In 2000, Luis Chadinha decided to take on a Field Service Supervisor position opportunity at Waukesha Electric Service where he was responsible for managing personnel and projects of many types. He was part of the team that performed the first field retrofit at Clark County PUD on a FPE transformer. After this first project he also completed several other successful retrofits of GE and McGraw-Edison LTCs.

In 2005 he moved to NASS and continued with success in the transformer field service industry. He handled many turnkey projects including high risk ones like retrofits of Westinghouse and Allis Chalmers LTCs. The first one of these projects completed for SDG&E is still in operation today (same applies for all retrofit projects that followed).

In 2010 Luis Chadinha was offered and accepted a Field Service Manager position at Delta Star to start up a Field Service Division. Accordingly he was responsible for hiring new personnel, specified the oil processing rigs including work processes, prepared project quotations and implemented internal structures for all aspects including finance and operations.

In July 2013 Luis Chadinha joined Reinhausen Manufacturing Inc. as Project Manager for Asset Management. Luis is currently preparing all aspects of turn-key projects including quotations, subcontractor communications, project lead at site and final reports. Luis has successfully completed many retrofit projects of LTCs including a high profile replacement of a GE LRT-200 at Spirit Aero (after the successful completion of this project, a second retrofit at this customer is scheduled for Spring 2016). To round up his long list of successful LTC retrofits, Luis recently completed a very high risk project at an industrial facility (Metaloides) replacing a de-energized tap changer with an On-load tap changer, which allowed the end-user to increase output capacity by 20% (article available at Reinhausen website).

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REINHAUSEN MANUFACTURING KEY PERSONNEL: NICK PRATT

Nick Pratt

Nick Pratt began his career with Siemens Power Transmission and Distribution in 2007 as a Field Service Technician installing medium and large power transformers.

In 2008 Nick was promoted to Senior Field Service Technician. Nick learned the skills relating to all aspects of processing and commissioning power transformers. Nick was part of a team that installed 4 ABB and 5 Siemens Brazil power transformers in Clearwater, Florida for Progress Energy.

In 2009, Nick was promoted to Field Supervisor/Crew Leader where he led 4-8 technicians on different site jobs. Nick was responsible for testing and commissioning of all power transformers installed by his crew.

In 2010, Nick performed a complete power transformer upgrade from 850MVA to 975MVA at Turkey Point Nuclear Power Plant for Florida Power & Light.
The same year Nick completed a transformer replacement in 14 days at Indian Point Nuclear Power Plant for Entergy.

After his success at Turkey Point Nuclear Power Plant he returned in 2011 to complete an identical upgrade on a second power transformer in service at this site.

In October 2011, Nick accepted a position as Project Manager for Asset Management at Reinhausen Manufacturing Inc. in Humboldt, TN. Nick is currently managing Turnkey Projects including site management of working crews. He also manages all communications with the subcontractors and oversees transformer oil processing/vacuum filling and testing aspects. He has completed many LTC retrofit projects including McGraw, GE, Allis Chalmers, Federal Pacific and Westinghouse units, all being replaced with Reinhausen RMV II load tap changers.

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REINHAUSEN MANUFACTURING KEY PERSONNEL: JIM GERUT

Jim Gerut

Has energy industry experience with Electrical Power Transmission & Distribution systems including electrical engineering expertise with extensive background in protective relaying and substation automation. Jim holds a BS in Electrical Engineering from Arizona State University, Tempe, Arizona and completed programs on Power Grid Transmission and Switchman Certification.

Jim joined Reinhausen Manufacturing Inc. as Area Sales Manager – Pacific Southwest Region in 2010 where he supports customers in seven western states in all aspects relating to On-Load Tap-Changers, voltage controllers, transformer accessories and asset management solutions for utilities and industrial accounts.

Prior to joining Reinhausen Jim worked at Siemens Energy as Business Development Manager Pacific Southwest Region for two years being responsible for multi-state Southwestern region focusing on transmission and distribution solutions for electrical utilities, municipalities, cooperatives, solar, and renewable energy firms.

Jim's work experience includes IBM Direct (Sales Account Executive 2007-2009), Guardian Life Insurance (2005-2007), INSIGHT – Account Executive (2003-2005).

From 2000-2002 Jim worked at ALSTOM (currently AREVA) – Southwest Regional Sales Manager where he managed the Transmission & Distribution Division of ALSTOM covering six southwest states and being responsible for substation hardware and software with an emphasis on protective relaying. He led group technical and software presentations on large protective relay and substation technology projects with APS, SRP, Dow Chemical, Exxon/Mobil and the US Department of Energy among others.

Jim began his career at Western Area Power Administration – Electrical Engineer/ Operations Engineer 1987-2000 where he was responsible for protective relay engineering design, installation, testing, and technical support for protective relaying, meters, SCADA, and DC control applications, including commissioning of new substations. He had the responsibility for electrical engineering expertise on several hydroelectric facility projects such as Hoover Dam, Parker Dam, Davis Dam, and other Colorado River facilities. Jim eengineered and installed a system separation scheme that was approved and implemented by LADWP, SCE, NV Energy and other entities.

Victor Castano

Victor has gathered an extensive Load-Tap Changer experience since joining Reinhausen Manufacturing Inc. as an assembler in January of 2002. Victor moved to the Field Service Department of Reinhausen Manufacturing in January of 2007 where he completed dozens of field service maintenance jobs of LTCs. Additionally he supervised load tap changer placement and installation including wiring schematics, welding operations, wiring operations and LTC commissioning. Victor oversees and performs transformer testing relating to the LTC application and operation in the field and is currently responsible for Technical Support on Reactance type LTCs.

Victor is OSHA certified in Construction Safety and Health and is certified in Confined Space Safety.

Juan Carlos Hernandez

Juan Carlos joint Reinhausen Manufacturing Inc. in January of 2013 and supervises the installation and commissioning of LTCs, transformer testing, vacuum processing and oil filling, testing of transformer accessories and supervision of crane handling.

Prior to joining Reinhausen Juan Carlos worked at WEG Industries from 2009 until 2013, where he was a Transformer Services Supervisor supervising and coordinating transformer offloading at site and overseeing the assembly and installation of power transformers including all aspects like performing electrical testing of low, medium and large power transformers, verifying the wiring and electrical circuits of transformer accessories, performing internal inspections of the core and coil assembly, supervising vacuum processing and degassing.

CITY OF RIVERSIDE - RFP 1534

REINHAUSEN MANUFACTURING INC
ADDITIONAL PROJECTS REFERENCE LIST

October 2015

RM – Bernhard Kurth

OPEN

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REINHAUSEN MANUFACTURING INC.

CITY OF RIVERSIDE - RFP 1534

REINHAUSEN MANUFACTURING INC. – PROJECTS REFERENCE LIST

- Reinhausen Manufacturing (RM) started operations in the United States on 1.1.1987 in Alamo, TN
- RM moved from Alamo to Humboldt, TN in April of 1991
- Product range offered by RM:
  - RMV-II LTCs and MD-III motor drives as well as TAPCON 250 automatic controllers
  - RM provides spare parts and field services for Maschinenfabrik Reinhausen and Reinhausen Manufacturing LTCs
  - Provides sales and technical support for Messko products (now through ICMI*)
  - Provides Sales and technical support for Automation & Control products (now through ICMI*)
  - **Offers Turn-key services covering modernization of power transformers (includes LTC replacements, instruments and automatic controllers updates, etc.). Other transformer services offered through our sister company Atlantic Transformer Services (ATS*)**
- Location set-up:
  - Production facility in Humboldt, TN incl. order processing center (OPP, OPS, OPL), FS specialists, ASM/Product Specialists
  - Sales office in Charlotte, NC
  - Sales office in Dallas, TX
  - Home offices in Scottsdale Arizona and California

* Reinhausen subsidiary

CITY OF RIVERSIDE - RFP 1534

REINHAUSEN MANUFACTURING INC. – PROJECTS REFERENCE LIST

- Reinhausen Manufacturing (RM) has been offering technical support to Field Service companies replacing worn-out LTCs since 1987. The technical support offered includes the following areas:
  - Appropriate LTC selection based on the original nameplate information of the transformer
  - Appropriate selection of the required LTC accessories to meet current operational requirements
  - Production of appropriate LTC connection diagrams to provide a cross-reference between the original LTC and the new LTC connection point designations
- In 2007 Reinhausen Manufacturing Inc. completed the first turn-key replacement project in the field, replacing Hitachi URB LTCs installed in two transformers at New Jersey Transit in NJ.
- Since then, numerous turn-key projects have been completed by Reinhausen replacing GE, Westinghouse, Allis Chalmers, Federal Pacific, McGraw and other tap changer brands (please refer to next page). The list of projects starting on page 6 is not an all inclusive list. Its purpose is to provide a quick overview of the broad scope of projects completed by Reinhausen.

CITY OF RIVERSIDE - RFP 1534

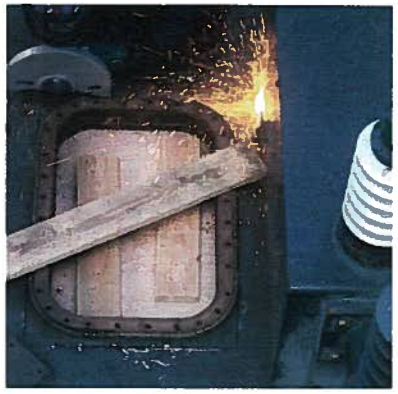
REINHAUSEN MANUFACTURING INC. – PROJECTS REFERENCE LIST

Maintenance		
- Turn-key maintenance of LTCs (diverter switch inserts and tap selectors) incl. LTC upgrades, oil handling and transformer testing		
- Turn-key maintenance of RMV and RMT LTCs incl. upgrades, oil handling and transformer testing		
LTC retrofits (brands replaced)	**new LTC applied**	
Hitachi type URB	VRC	
MR type M	VM	VRC
RM type RMV-S (DETC)	VV	
Westinghouse type **UTT**	RMT	RMV
Westinghouse type **UVT**	RMV	UVT-LTX
Federal Pacific type **TC546**	RMV	
GE type **LRT 200**	RMV	
McGraw type **496**	RMV	
McGraw type **550**	RMV	
Siemens Allis type **TLH21**	RMV	
Other services provided turn-key		
- Transformer re-gasketing		
- Bushing replacements		
- Oil processing and vacuum filling, transformer testing		
- Turn-key installation of on-line oil filtration system OF100 including all piping and controls for conventional arcing-in-oil LTCs		

Replacement of a Hitachi URB

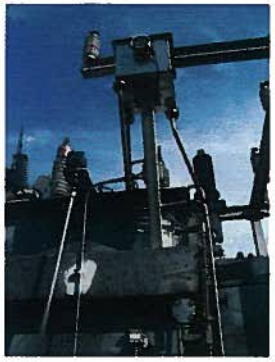
What? Where? How? Benefits?

- Replacement of a Hitachi URB with a VRC I 701
- Customer: New Jersey Transit Authority Location: New Jersey, NJ
- Scope (turn-key):
  - Removal of the URB, installation of adapter plate/flange and new VRC, installation of new expansion tank for LTC, Messko breathers
  - Internal splicing/crimping, welding, oil handling, vacuum processing & testing
- Reasons for retrofit:
  - URB including motor drive was unreliable, difficulty to get technical support and parts
  - High maintenance costs
  - VACUTAP® benefits



Main success factors

- RM provided all engineering support for design of new components and LTC selection
- Quick turnaround time, **two** transformers completed back-to-back in 16 days



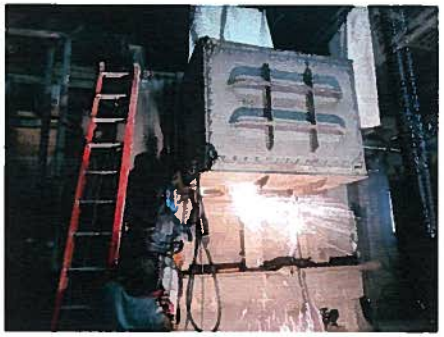
CITY OF RIVERSIDE – RFP 1534

REINHAUSEN MANUFACTURING - KEY PROJECTS REALIZED (2014)

Replacement of a RMV-S

What? Where? How? Benefits?

- Replacement of a RMV-S-1500 DETC with a resistance LTC type VV
- Customer: Metaloides Location: Puebla, Mexico
- Scope (turn-key):
  - Removal of the RMV-S, installation of adapter tank, installation of new VV, installation of new expansion tank for LTC
  - Internal splicing/crimping, welding, oil handling, vacuum processing & testing
- Reasons for retrofit:
  - Customer wished to upgrade from a DETC to a LTC solution
  - VACUTAP® benefits



Main success factors

- RM provided all engineering support for design of new components and LTC selection
- RM pre-assembled all components (LTC, MD, expansion tank) and pre-cut all extension leads prior to shipment to customer site
- Quick turnaround time, less than 10 days

Replacement of a McGraw Edison 550C

What? Where? How? Benefits?

- Replacement of McGraw 550C Tap Changer with a RMV-II
- Customer: City of Pratt Location: Pratt, Kansas
- Special solution: utilization of a specially modified RMV-II with a back plate designed to fit directly to the flange opening of the McGraw 550C LTC and design of a new transformer control cabinet integrating motor drive unit
- Scope (turn-key) :
  - Removal of the existing McGraw 550C, installation of new RMV-II
  - splitting of preventive auto-transformer (reactor) auto-point
  - Internal splicing/crimping, welding, oil handling, vacuum processing & testing
- Reasons for Retrofit:
  - High maintenance costs of the McGraw 550C LTC
  - Poor reliability of the 550C
  - VACUTAP® benefits

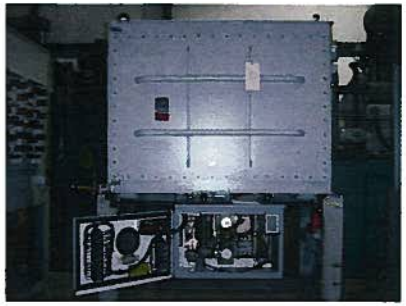
Main success factors

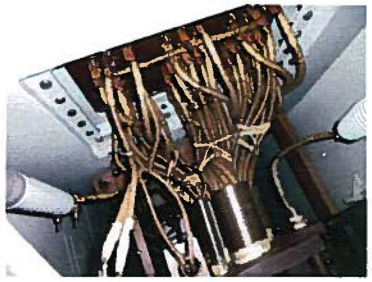
- In–house design of a new transformer control cabinet integrating the LTC motor drive (see picture)
- 6 day turnaround time
  - Customer Contact: Kelly Hempfill – 620-450-8215

Replacement of a GE LRT 200

What? Where? How? Benefits?

- Replacement of a GE LRT 200 with a RMV II
- Customer: Delmarva Power & Light Location: Oceans City, MD
- Scope (turn-key):
  - Removal of the existing GE LRT 200, installation of new RMV-II
  - Internal splicing/crimping, welding, oil handling, vacuum processing & testing
- Reasons for retrofit:
  - LRT200 failed (emergency response)
  - High maintenance costs
  - Poor reliability of the LRT200
  - VACUTAP® benefits





Main success factors

- Special Motor Drive MD1.5 design to accommodate restricted space
- Quick turnaround time
  - Customer Contact Jakob Kuruvilla (302) 287 0887

CITY OF RIVERSIDE – RFP 1534

REINHAUSEN MANUFACTURING - KEY PROJECTS REALIZED (2014)

Replacement of a GE LRT 200, Bushings Replacement

What? Where? How? Benefits?

- Replacement of a GE LRT 200 with a RMV II
- Customer: Spirit AeroSystems Location: Shanute, Kansas
- Scope (turn-key):
  - Removal of the existing GE LRT 200, installation of new RMV-II, controls upgrade with Messko instruments and Tapcon 250, bushings replacement,
  - Internal splicing/crimping, welding, oil handling, vacuum processing & testing
- Reasons for retrofit:
  - High maintenance costs
  - Poor reliability of the LRT200
  - VACUTAP® benefits

Main success factors

- Planning of the project, willingness to accommodate customer needs
- Quick turnaround time, customized adapter plate

Additional project already in the pipeline

- Customer Contact : Patrick Page 316-523-7020

Replacement of an Allis Chalmers TLH -21

What? Where? How? Benefits?

- Replacement of a TLH -21 with a RMV-II, removal of the original Preventative Auto -Transformer and installation of a new PA
- Customer: City of Mesa Location: Mesa , Arizona
- Scope (turn-key):
  - Removal of the existing TLH-21, installation of an external adapter flange, installation of new RMV-II
  - Internal splicing/crimping, welding, oil handling, vacuum processing & testing
  - **installation of new Preventative Auto with four (4) lead arrangement**
- Reasons for retrofit:
  - Customer had problems with 16L limit sticking and allowing LTC to run over its limits

Main success factors

- 7 day turnaround
- Internal design of adapter flange, ability to supply new PA
  - Customer Contact: Kyle Nicholson 480-644-6897

CITY OF RIVERSIDE – RFP 1534

REINHAUSEN MANUFACTURING - KEY PROJECTS REALIZED (2013)

Replacement of a Westinghouse UVT

What? Where? How? Benefits?

- Replacement of a Westinghouse UVT with a RMV-II
- Customer: Progress Energy, Florida Location: Orlando, Florida
- Scope (turn-key):
  - Removal of the existing UVT tap changer, installation of new RMV-II
  - Welding, oil handling, vacuum processing & testing
- Reasons for Retrofit:
  - Emergency, LTC had failed and was locked out on fixed tap position

Main success factors

- Stock LTC available suitable for emergency change-out
- Quick turnaround time
  - Customer Contact: Benito Ramos 407-921-7404

CITY OF RIVERSIDE – RFP 1534

REINHAUSEN MANUFACTURING - KEY PROJECTS REALIZED (2015)

Replacement of a Westinghouse UVT

What? Where? How? Benefits?

- Replacement of a Westinghouse UVT with a RMV-II
- Customer: Tucson Electric Power Location: Tucson, Arizona
- Scope (turn-key):
  - Removal of the existing UVT tap changer, installation of new RMV-II
  - Welding, & testing
- Reasons for Retrofit:
  - Emergency, LTC had failed and compartment overfilling because of leaking backboard

Main success factors

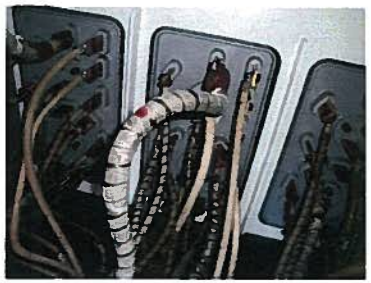
- Stock LTC available suitable for emergency change-out
- Quick turnaround time
  - Customer Contact: Randy Thumm 520-745-3427

CITY OF RIVERSIDE – RFP 1534

REINHAUSEN MANUFACTURING - KEY PROJECTS REALIZED (2015)

Replacement of a Westinghouse UTT

What? Where? How? Benefits?



- Replacement of a Westinghouse UTT with a RMV-II, modification of the original Preventative Auto
- Customer: Benton PUD Location: Kennewick, Washington
- Scope (turn-key):
  - Removal of the existing UTT, installation of an external adapter flange, installation of new RMV-II
  - Internal splicing/crimping, welding, oil handling, vacuum processing & testing
  - **Modification of the existing (3) lead Preventative-Auto into a four (4) lead arrangement**
- Reasons for retrofit:
  - Maintenance costs
  - Poor reliability of the UTT

Main success factors

- 7 day turnaround
- Internal design of adapter flange, ability to modify PA
  - Customer Contact: Terra Flores 509-585-2277

Upgrade of a Westinghouse UVT

What? Where? How? Benefits?

- Upgrade of UVT to UVT-LTX
- Customer: Duke Energy Location: Greensboro, NC
- Scope (turn-key):
  - UVT-LTX upgrade (includes new RM components: motor drive MD-II, by-pass and VI, VIM system
  - Welding, oil handling, testing

- Note: At beginning of project two options where explored (both offering VACUTAP® benefits):
  - Removal of UVT and replacement with RMV-II-1500
    - Advantage: complete new RMV with all known improvements over UVT
    - Disadvantage: drain of main transformer, vacuum fill, outage time increased, higher risk
  - LifeTime Extention UVT-LTX
    - Advantage: No main tank oil handling, lower costs
    - Reduced outage time and risk

Main success factors

- Pre-assembly of the entire set of components at our factory in Humboldt before shipment to the site
  - Customer Contact: Tommy Jackson 336-312-0725

Upgrade of a Westinghouse UVT to UVT-LTX

What? Where? How? Benefits?

Projects realized (turn-key):

Customer: Keys Energy	Location: Key West, FL
Customer: Duke Energy	Location: Greensboro, NC
Customer: Keys Energy	Location: Key West, FL
Customer: New Brunswick Power	Location: New Brunswick, Canada
Customer: Gerdau Ameristeel	Location: Whitby, Canada

On-line Oil Filter Installation, Bushings Replacement

What? Where? How? Benefits?

- Replacement of Velcon oil filter unit with 3 units (each unit dedicated to one LTC column) OF100 including appropriate controls
- Customer: ATC Location: Toulouse, MN
- Scope (turn-key):
  - Removal of the existing Velcon oil filter unit, installation of 3xOF100 including all piping and controls, routine maintenance of 3xRI3003, bushings replacement, leaks repair, new Messko breathers
  - Welding, oil handling, vacuum processing & testing
  - Note: 800MVA Phase Shifting Transformer, 200,000 liters of oil
- Reasons for Retrofit:
  - Reliability program at the customer

Main success factors

- Offered procurement of bushings incl. selection
- Quick turnaround time
  - Customer Contact:

Other important turn-key projects completed (2013-2015)

- Turn-key replacement and upgrade of eight (8) LTC motor drive units and controls on two (2) 240MVA Phase Shifting Transformers at Minnesota Power, International Falls, MN (2013)
- Turn-key maintenance on McGraw 396 and bushings replacement , Minnesota Power, Little Fort, MN (2013)
- Bushings replacement and re-gasketing of a 235MVA GSU, Hines Energy Complex, Duke Energy, Bartow, FL (2015)
- Bushings replacement and re-gasketing of a 93.5MVA auto-transformer, 138kV/69kV, Keys Energy, FL (2015)
- Bushings replacement and re-gasketing of two (2) 440MVA, 345kV transformers, LG&E, Louisville, KY (2014)
- Three (3) UVT LTC retrofits with RMV-II on three (3) 440MVA , 345kV transformers at TVA, Knoxville, TN
  - First unit completed 9/2015
  - Second and third units scheduled for 11/2015 and 12/2015