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CAROLINA GAS TRANSMISSION SM
A SCANA COMPANY

VIA CERTIFIED MAIL
AND E-MAIL

September 17, 2007

Ms. Linda Daugherty
Director, Southern Region
Pipeline and Hazardous Material Safety Administration
U.S. Department of Transportation
233 Peachtree Street, Suite 600
Atlanta, GA 30303

RE: **Response to NOTICE OF AMENDMENT**
And
PROPOSED COMPLIANCE ORDER (CPF 2-2007-1009M)

Dear Ms. Daugherty:

This letter responds to the Notices of Amendment and Proposed Compliance Order **(CPF 2-2007-1009M)**, issued to Carolina Gas Transmission (CGT), a SCANA Company, during the Fall of 2006. With respect to the October 2-5, 2006 and October 23-26, 2006 PHMSA audits of CGT's Gas Integrity Management Program, CGT has revised the following sections of its Integrity Management Plan (IMP) to comply with the Notice of Amendment and Proposed Compliance Order dated May 22, 2007:

- Section 1: Introduction
- Section 3: HCA Identification
- Section 4: Threat Identification and Evaluation
- Section 5: Risk Analysis & Prioritization
- Section 7a: EC Direct Assessment Plan
- Section 9: Conducting Assessments
- Section 10: Remediation
- Section 12: Preventive & Mitigative Measures
- Section 13: Continual Evaluation & Reassessment
- Section 14: Management of Change Process
- Section 15: Quality Assurance Process
- Section 18: Personnel Knowledge & Training

Because CGT has added new provisions to its IMP, the Section numbers referenced in the IMP have changed since the audit. For your convenience, CGT has enclosed a full copy of each revised section with this letter.

CGT considers the full text of its IMP to be confidential, commercially sensitive information, the release of which could cause competitive harm to CGT. This information is not of the type usually released to the public and CGT has not made this information public. Accordingly, this submission includes the enclosed information that meets the requirements of the Freedom of Information Act, 5 U.S.C. §552(b)(4), and U.S. Department of Transportation regulations governing information that is exempt from public disclosure. The information should, therefore, be treated as confidential, commercially sensitive information and should not be made available to the public.

Each page of the original of this response that contains confidential information has been marked as "Confidential." CGT also is enclosing a copy of this response with the confidential information deleted.

CGT respectfully requests that any correspondence and communications regarding this response letter be directed to:

Laura A. Comstock
Supervisor, Safety & Compliance
Carolina Gas Transmission Corporation
105 New Way Road
Columbia, South Carolina 29224-2407

Should you have additional questions, please call me at (803) 217-6457.

Sincerely,

Samuel L. Dozier
VP, Commercial & Field Operations

cc: B. Craig Collins
Laura A. Comstock
T. Wayne Vermullen

***Item 1A*: § 192.905(a) and § 192.903(2), (3), and (4)**
"There are no detailed procedures describing a repeatable process by which HCA maps are produced. Flow charts are being used that do not adequately address the process used to produce the maps. For example, the flow charts do not describe who is to perform specific tasks and how they are to document the output of those tasks. In addition, there is inadequate guidance for application of PIRs as they relate to identified sites. For example, no direction is provided that describes where a PIR is to be located in relation to a school with a playground."

Response to *Item 1A*:
CGT has amended its written IMP to address ***Item 1A***. **Section 3**, subpart **3.3.2**, *Data Collection for High Consequence Areas*, is amended as follows:

> "Field employees with Class Location and HCA Survey Responsibility gather the information for High Consequence Areas. The Technical Services Engineer maintains data included on the density survey."

In addition, the response to ***Item 1B*** offers a response to HCA mapping addressed in ***Item 1A***. Please see that Response for further information on HCA mapping activities.

CGT has amended its written IMP to further address ***Item 1A***. **Section 3**, subpart **3.3.2**, *Data Collection for High Consequence Areas*, under the fifth and sixth bullets of *Verification Responsibilities,* is amended as follows:

- "Confirm outside gathering area features (State parks, parking lots, and college campuses) as necessary.
    - If the PIR touches any part of an outside area thought to be an outside gathering area, the area will be considered a HCA."

***Item 1B*: § 192.905(b) and § 192.903(4)**
"There is no documentation of the basis for inclusion or exclusion of identified sites. Additionally, no instructions are provided regarding how to provide this documentation."

Response to *Item 1B*:
CGT has amended its written IMP to further address ***Item 1B***. **Section 3**, subpart **3.3.2**, *Data Collection for High Consequence Areas*, under the third, fourth and sixth bullets of *Maintenance Responsibilities,* is amended as follows:

> **Maintenance Responsibilities**
> - Add additional buildings when found, and note whether intended for human occupancy.
> - Delete buildings from GIS that have been removed or that no longer exist.
> - Identify buildings that have changed usage.
> - Add Identified Sites per definition in 3.1.2, *Identified Sites.*
> - Obtain Global Positioning Satellite (GPS) coordinates for all new structures.
> - Enter all new data as described into GIS.

***Item 1C*: § 192.905(b)**
"There is a lack of instruction provided to emergency responders to ensure that they provide consistent and quality feedback during events designed to obtain this information. There was no documentation available to substantiate HCA identification updates."

Response to *Item 1C*:
CGT has amended its written IMP to address ***Item 1C***. **Section 3**, subpart **3.3.2**, *Data Collection for High Consequence Areas*, the fourth bullet of *Data Gathering: Field Employees*, is amended as follows:

- "Gather information on population growth and potential identified sites from meetings with landowners, community contacts and emergency responders as outlined in Operation and Maintenance 503 Emergency Responder and Public Official Liaison, and the SCANA Public Awareness Plan."

CGT has amended its written IMP to further address ***Item 1C***. Within **Section 3**, subpart **3.3.3**, *Identification of High Consequence Areas*, the first paragraph of *Notification Confirmations* is amended as follows:

"Upon the notice of the existence of a new structure, the density survey shall be reviewed. The Technical Services Engineer shall confirm that field employees are notified of the existence of new or extended HCAs, and shall document that the annual review was conducted."

***Item 2A*: § 192.917 (e)(3) and (4)**
"CGT program and procedure requirements are inadequate to track MOP and MAOP changes to ensure that stable long seam threats do not become unstable for both covered and non-covered segments."

Response to *Item 2A*:
CGT has amended its written IMP to further address ***Item 2A***. Within **Section 4**, subpart **4.6.4**, *ERW Pipe Threat – §192.917(e)(4)*, the third bullet and six paragraphs that follow are amended as follows:

- "Lowering MOP of the pipeline segment to the maximum operating pressure experienced during the preceding five (5) years.

"As indicated in *Figure 4-8: ERW Pipe Evaluation*, data fields from general system factors and manufacturing & construction are used to make decisions **T16** through **T19** that are recorded on Form *F4-1* for each covered segment. CGT will consider low frequency welded pipe (ERW) susceptible to the same failure mechanisms (CGT does not have EFW pipe or pipe with a joint factor less 1.0). Youngstown Manufacturing was strongly associated with ERW issues, and A.O. Smith was associated with EFW issues.

"Annually, between January 1 and March 31, the Technical Services Engineer will obtain from Gas Control's SCADA, the previous five (5) years operating pressure data for those pipeline segments containing low frequency ERW pipe.

"The operating pressure data will be compared to the MOP of the pipeline segment. If the five-year operating pressure's maximum is less than the current segment MOP a new MOP at the highest recorded pressure will become the new MOP or the pipeline segment will be assessed for longitudinal seam integrity.

"The new MOP pressure, if changed, for the given line segment is communicated to Gas Control which then become the new MOP.

"All MOP changes will be documented and placed in the segment HCA folders.

"MAOP information is retained by Gas Control. Any changes to the MAOP will be communicated to the Technical Services Engineer to determine if the pipeline segment will need to be assessed for longitudinal seam integrity."

***Item 2B*: § 192.919(c), § 192.921(d), § 192.933(b), and § 192.937(a)**

"CGT does not have program requirements to ensure that the date for completion of field activities for an assessment is recorded so that the timeframe for evaluating anomalies and reassessment date(s) can be accurately determined."

Response to *Item 2B*:
CGT has amended its written IMP to further address ***Item 2A***. **Section 10**, subpart **10.5**, *ERW Pipe Threat – §192.917(e)(4)* is amended as follows:

10.5 Prioritized Evaluation & Remediation Schedule

10.5.1 Overview

The previous subsections described the procedures used to characterize anomalous conditions for scheduled repair conditions for External and Internal Corrosion per *ASME B31.8S, Section 7, Figure 4.* Special condition categorization requirements per 49 CFR Part §192.933(d) include:

- Immediate Repair Conditions
- Scheduled Conditions
- Monitored Conditions

10.5.2 Schedule Preparation

"Upon completion of the assessment, and after the anomalies have been classified as either Immediate, Scheduled, or Monitored, an examination and evaluation schedule will be prepared by Technical Services Engineer using ILI and Pressure Test data or Technical Services Corrosion Technician using DA. The schedule and other relevant information will be shown on Form F10-1 CGT ILI Data Sheet, or Form F10-2 ECDA Data Sheet."

"The schedule shows when an anomaly *must* be examined and evaluated and when it was actually examined and evaluated. In addition, the schedule shows the determination as to whether a repair was required, if the repair was made, the date of the repair, and other necessary information."

10.5.3 Repairs

"Once the anomaly has been examined and evaluated, a *determination is made as to* whether or not the anomaly requires repair. If repair is necessary, the repair is typically made within 10 days of the determination. In the event the repair cannot be made within 10 days, the anomaly severity will be determined in accordance with ASME B31.8G and a date will be selected for repair based on the remaining wall thickness and an estimated corrosion rate of 12 mils per year."

10.5.4 Reassessment Date

"Re-assessment dates are contingent upon the completion of repairs and the severity of remaining anomalies. Resulting re-assessment dates will be recorded on the Baseline Assessment Plan to provide for future assessments within the required time frame. See ***Section 8 - Baseline Assessment Plan*** for further information."

***Item 3A*: § 192.917(a)**
"CGT's IMP includes a statement (in Section 4.4) that threat interaction will be considered, but includes no process for implementation. The Kiefner model currently used by CGT, does not address threat interaction."

Response to *Item 3A*:
CGT has amended its written IMP to address ***Item 3A***. **Section 4**, subpart **4.3** *Threat Identification*, third paragraph, is amended as follows:

> "Upon completion of the evaluation of each threat category, CGT also evaluates the interactive nature of the threats. While a single threat category may not pose a significant threat to the pipeline system, multiple threat categories on the same pipeline segment can contribute to a compounding effect that must be considered for the pipeline segment. The process that ensures the evaluations of interactive threats is inherent in the Kiefner Risk Rank Model with the results providing a ranking to be used to prioritize the assessments. In addition, the subject matter experts (SMEs) review the rankings to ensure that the information is reasonable."

***Item 3B*: § 192.917(a)**
"CGT has concluded, without an adequate documented basis, that three threats - stress corrosion cracking, internal corrosion, and human error - are not threats of concern throughout their system."

Response to *Item 3B*:
CGT has amended its written IMP to address ***Item 3B*** and Threats of Concern (TOC). **Section 4**, subpart **4.4.3** *Data Sources*, is amended as follows:

4.4.3 Data Sources

CGT has identified appropriate sources of information both within CGT and from external sources such as industry wide data and technical publications. The data sources located within CGT are typically associated with design & construction or operational & maintenance records. The source of the data should be considered and some type of justification developed to explain why that particular source is appropriate.

CGT has performed an initial review of the following data sources. CGT anticipates the data sources will grow over time as the program matures and additional data is collected.

Typical Data Sources:

- Process & instrumentation drawings (P&ID)
- Pipeline alignment drawings
- Original construction inspector notes /records
- Pipeline aerial photography
- Facility drawings / maps
- As built drawings
- Material certifications
- Survey reports / drawings
- Safety related condition reports
- Operator standards / specifications
- Industry standards / specifications
- O&M procedures
- Emergency response plans
- Inspection records
- Test reports / records
- Incident reports
- Compliance records
- Design / engineering reports
- Technical evaluations
- Manufacturer equipment data

CGT has also used subject matter experts and those directly involved in integrity related activities to gain additional insight into the data being collected.

Any new information or data received will be incorporated into the program within one (1) year of its initial documentation. The Management of Change process detailed in ***Section 14 - Management of Change Process*** will guide the documentation process required for these or other changes.

A TOC is determined by performing the prescriptive-based processes described in Sections 4.6 and 4.7. These processes have been based upon the "Non-Mandatory Appendix A" in B31.8S-2001. These processes provide the basis for excluding any Potential Threat from a pipe segment or facility that is being evaluated.

If a threat has been retained due to insufficient data, or if the quality of the data is questionable or unreliable, CGT may perform specific data gathering activities to acquire the information needed to adequately perform the analysis. Should this analysis conclude that a given TOC is not valid, then the assessment plan will be changed as appropriate.

CGT has amended its written IMP to further address ***Item 3B***. **Section 4**, subpart **4.6.5** Corrosion Threat - 192.917 (e)(5), *Figure 4-9: External Corrosion Evaluation*, and *Figure 4-10: Internal Corrosion Evaluation* are amended as follows:

4.6.5 Corrosion Threat – §192.917(e)(5)

Potential External and Internal Corrosion threats are evaluated with *Figure 4-9: External Corrosion Evaluation* and *Figure 4-10: Internal Corrosion Evaluation* as described in Section 4.9, *Figures*.

> NOTE: §192.917(e)(5) for corrosion threat evaluation is somewhat unique in the IM Rule as it **explicitly requires the evaluation of non-covered line pipe segments that have similar material coating and environmental conditions as the covered segments when the threat of corrosion exists.** Form *F4-1* provides data entry fields for recording non-pipe segment evaluations for external and internal corrosion evaluation where appropriate. Any subsequent evaluation and remediation of non-covered pipe segments for corrosion **are not covered** by the IM Rule, but rather by CGT's O&M procedures established under Part 192 for general testing and repair.

External Corrosion Threat Evaluation

As indicated in *Figure 4-9: External Corrosion Evaluation*, external corrosion data fields from the Kiefner Risk Rank Model and line pipe file information are used to make decisions **T20** through **T26** that are recorded on Form *F4-1*, or similar. Current conclusions on external corrosion as a TOC and any comments are also recorded on Form *F4-1*, or similar.

Internal Corrosion Threat Evaluation

Figure 4-10: Internal Corrosion Evaluation presents the procedural decisions that are used to determine if internal corrosion is a TOC. Internal corrosion data fields are considered in making decisions **T27** through **T32** that are recorded on Form *F4-1*, or similar.

CGT has amended its written IMP to further address ***Item 3B***. **Section 4**, subpart **4.7.1** *SCC Threat - High pH Type*, is amended as follows.:

4.7.1 SCC Threat – High pH Type

Figure 4-11: Evaluation for High pH SCC Threat graphically depicts the evaluation for high pH type SCC discussed in Section A.3.3 of B31.8S. This evaluation uses data fields **S1** through **S3**, **E1**, **G2**, and **G9** in making decisions **T33** through **T39** and are recorded on Form *F4-1*.

> NOTE: See ***Section 7 – Direct Assessment***, for evaluation of near-neutral pH SCC.

CGT has amended its written IMP to further address ***Item 3B***. **Section 4**, subpart **4.7.2** *Incorrect Operations (Human Error) Threats* is amended as follows:

4.7.2 Incorrect Operations (Human Error) Threats

"Evaluation of Human Error threats to pipeline system integrity are performed with the procedure in *Figure 4-12: Evaluation of Human Error (Incorrect Operations) Threat.* Human Error (HE) data fields are used to make decisions **T40** through **T45** that determine if HE is a TOC, and the additional steps needed to prevent the occurrence (or reoccurrence) of HE. The Incorrect Operations threat is present with respect to all HCA segments, and is managed using:

- Operator Qualification Plans for the appropriate operating personnel;
- Internal audit function that periodically reviews operator actions for compliance with procedures;
- Periodic procedure reviews to ensure items are current;
- A process for the review of failures and appropriate modification of procedures and communication to personnel;
- A review of the Gas Control Daily Log – Remarks Column
- A review of the Callout Report (Related Equipment Failures)."

CGT has amended its written IMP to further address ***Item 3B***. Within **Section 5**, subpart **5.6.6** *Risk Considerations of Specific Threat*, the **fourth, sixth and seventh bullets are** amended as follows:

5.6.6 Risk Considerations of Specific Threats

"The risk considerations for the following specific threat categories have been considered in ***Section 4 – Threat Identification***.

- Third Party and Outside Force Damage
- Cyclic Fatigue
- Manufacturing & Construction Defects
- Corrosion (Internal and External)
- Low Frequency ERW and Lap Welded Pipe
- Stress Corrosion Cracking
- Incorrect Operations

"The Kiefner Risk Rank Model is capable of addressing each of these threat categories, and CGT has incorporated these parameters into its customized model."

***Item 3C*: § 192.917(e)(1)**

"There is no procedure to assure that data on encroachments and foreign line crossings are integrated with ILI or ECDA results. This data integration process is required by 192.917(e)(l) for addressing the threat of third-party damage."

Response to *Item 3C*:

CGT has amended its written IMP to further address ***Item 3C***. Within **Section 4**, subpart **4.6.1** *Third Party Damage - 192.917(e)(1)*, ***Figure 4-4: Evaluation of Third Party Damage Threat*** and the **entire paragraph** are amended as follows:

"Figure 4-4: Evaluation of Third-Party Damage Threat in Section 4-9, *Figures* graphically depicts the procedure followed in evaluating the Third-Party Damage threat for each covered segment in a pipeline section. Using data from the line files and the Kiefner Risk Rank Model, threat decisions **T1** through **T5** are made. The outcome of these decisions determine whether Third-Party Damage is a TOC for a given pipeline segment. This result is subsequently used to guide the evaluation of Comprehensive Additional Preventive Measures for the segment per §192.935 (see ***Section 12***). Similarly, CP Surveys can be triggered at foreign line crossings. Form *F4-1*, provided at the end of this Section, or similar, is used to record the answers to

T1 through **T5** and any supporting documentation for those decisions (or location of supporting documents)."

CGT has amended its written IMP to further address ***Item 3C***. Within **Section 7a**, subpart **7.4.4** *Procedure,* the **third paragraph** is amended as follows:

"To address the integration of the external corrosion threat in conjunction with the third-party damage threat, CGT gathers information on encroachments and foreign-line crossings as part of the Pre-assessment step of the DA Process."

CGT has amended its written IMP to further address ***Item 3C***. Within **Section 7a**, subpart **7.4.4.1** *Data Collection,* the **sixth bullet** is amended. Further, in that section, the **first two bullets** of *Data Collection Requirements* are amended as follows:

Data Collection

"CGT will identify and collect data to support an ECDA feasibility assessment, identify ECDA regions, and select indirect inspection tools [D.02.a, RP0502 §3.2.1]. The data to be collected must include the following categories [RP0502 §3.2.2]:

- Pipe Related
- Construction Related
- Soils/Environment Related
- Cathodic Protection Related
- Operational
- *Encroachment and foreign-line crossing locations*"

Data Collection Requirements

"As part of data collection requirements, CGT will:

1. "Define minimum data collection requirements based on the history and condition of the pipeline segment" [RP0502 §3.2.1.1];
2. "Identify data elements that are critical to the success of the ECDA process [RP0502 §3.2.1.1]; and
3. Collect data related to "all parameters that impact indirect inspection tool selection" [RP0502 §3.2.1.2]; and
4. Specify the required GPS accuracy.

"When ECDA is applied for the first time on a pipeline segment, the pre-assessment must use "more restrictive criteria" [192.925(b)(1)(i), D.01.b]. Further, CGT will also use SMEs when ECDA is applied for the first time.
CGT will use the following as "more restrictive criteria":

- A speculative number of one-calls for the region
- Review encroachment and foreign-line crossings
- All information gathered using GPS will have sub-meter accuracy."

CGT has amended its written IMP to further address ***Item 3C***. Within **Section 7a**, subpart **7.6.3.1** *Assignment of Excavation Priorities,* the **first bullet** is amended to include encroachment and foreign-line crossing locations as follows:

> **7.6.3.1 Assignment of Excavation Priorities**
>
> - *Immediate*: Indications that the pipeline operator considers as likely to have ongoing corrosion activity and that, when coupled with prior corrosion, pose an immediate threat to the pipeline shall be placed in this priority category [RP0502 §5.2.2.1]. "Additionally, indications in the top quadrants where encroachments or foreign-line crossings have occurred are also considered immediate priorities."

CGT has amended its written IMP to further address ***Item 3C***. Within **Section 9**, subpart **9.2.4** *Performing the ILI Tool Run,* the **sixth paragraph** is amended as follows:

> "CGT, in the performance of an ILI run for corrosion detection purposes (MFL), also runs a geometry tool to check for third-party damage. This geometry tool data is integrated with the MFL data, and examination of the pipe is performed when required. Using these tools complimentarily sufficiently assesses third-party damage; thus the use of encroachment and foreign-line crossing information to determine third-party damage is not necessary."

***Item 3D*: § 192.917(c)**
"CGT has insufficient description in its program to demonstrate that risk assessment is being used to address the objectives listed in ASME/ANSI B31.8S, other than risk ranking of HCA segments."

Response to *Item 3D*:
It is the position of CGT that *Sections 5.6.3* and *5.6.4* refer directly to NOA 3D. The approach to risk assessment chosen by CGT is the Relative Risk Ranking Assessment model. As such, no change will be implemented in these areas with respect to the concerns of NOA 3D.

> **5.6.3 Characteristics of the Risk Method(s)**
>
> "The purpose of the Kiefner Risk Rank Model is to provide a framework for CGT to evaluate and compare the diverse parts the pipeline system based on relative risk. The results of these evaluations can be used to priority rank the covered segments in the baseline assessment plan, evaluate preventative and mitigative measures, and perform continual evaluations and reassessments.
>
> "The Kiefner Risk Rank Model was originally designed for use by a typical Northeast Gas Association member that is operating relative small amounts of high pressure gas transmission lines with a maximum operating pressure of 50%SMYS or less. However, Kiefner and Associates have confirmed by letter that the algorithms for the TOCs other than SCC are still representative for operating pressures resulting in up to 72% SMYS. CGT has determined that sufficient data exists to adequately support the NYGAS Risk Model. The system data is stored in a Microsoft Access database

for documentation, and a risk algorithm calculates the risk for each distinct segment with the pipeline system.

"The segments are user defined with each segment consisting of uniform characteristics or attributes along its length. CGT has established its segments based upon changes in key attribute data to ensure sufficient resolution exists to perform a meaningful risk assessment.

"The model will rank all segments by relative risk, determine the factors that drive the risk, and evaluate the effects of risk reduction through preventive and mitigative measures using "what if" analysis.

"The Kiefner Risk Rank Model uses mathematical equations that utilize the pipeline attributes, environmental factors, and mitigative responses to calculate the likelihood of failure. The higher the resulting probability score, the more likely it is the failure will occur. However, the risk score will depend on both the consequence and probability scores.

"Since the format and weighting factors that characterize the equations are based on a combination of expert judgment, experience, and technical knowledge, the model provides relative risk rankings of the likelihood of failure rather than the true mathematical probability of failure. The experience factor reflects the frequencies and consequences of relevant past events.

"When the required data is either missing or questionable, CGT will use the most conservative value or weighting in the range (minimum to maximum of values) for the parameter. As additional data is obtained these default values will be updated to reflect actual data.

"CGT will, at a minimum, use a Subject Matter Expert (SME) approach to address any specific threat not addressed in the relative risk model.

"The relative model uses mathematical equations to represent the degree of exposure of people and property to the potentially damaging effects of a pipeline failure. The consequence equations also address the impact of loss of service to customers. The risk of failure from any particular threat is assumed to be the probability of failure from the threat, times the conceivable consequences of the failure. The total risk of failure for a segment is calculated as the sum of the risks for each threat.

5.6.4 Prioritization

"The total risk for each segment is a relative number. The higher the number, the higher the relative risk. This relative risk score assists in the decision making process by allowing the covered segments to be ranked according to relative risk and ultimately developing a prioritized list of covered segments.

"Using "what if" analysis, CGT determines the impacts of preventive and mitigative measures in terms of relative risk. Since the model considers the benefits of these risk reduction actions, various scenarios can be examined to determine the various degrees of risk reduction achievable.

"Upon completion of an integrity assessment or mitigative action, CGT will recalculate and update the risk model to reflect the new information obtained on the affected covered segments.

"Once the risk reduction actions have been implemented, CGT can use the model to re-rank the covered segments based upon the resulting relative risk.

"CGT also uses the processes described in ***Section 4 – Threat Identification*** and ***Section 14 – Management of Change Process*** to provide regular updates to the risk assessment process. The processes in ***Section 4 – Threat Identification*** are designed to provide pertinent information from field reports as gathered in Form *F3-1: Field Report on Potential New High Consequence Area (HCA) Along Pipeline Route.* Refer to Section 3.4.8, *New Potential HCAs Discovered by Field Personnel* and 3.6, *Forms* in ***Section 3 – HCA Identification*** for more information.

"CGT captures other changes that could affect the integrity of the pipeline system through the Management of Change process that is employed on a system-wide basis."

Item 3E: **§ 192.917(c)**
"There are no provisions in the plan or procedures to assure that risks are re-evaluated on a periodic basis or that the risk analysis process is integrated into other processes."

Response to *Item 3D*:
CGT has amended its written IMP to further address ***Item 3D***. Within **Section 1**, subpart **1.2** *How to Use This Manual,* the **fifth paragraph** is amended as follows:

"The written Integrity Management Plan (IMP) provides a detailed methodology for users to follow the principles of Integrity Management. *Figure 1-1: Map of the IMP Manual* illustrates the general process flow of CGT's written IMP. CGT also uses the processes described in ***Section 4 – Threat Identification*** and ***Section 14 – Management of Change Process*** to provide regular updates to the risk assessment process and re-assessment processes described throughout the written IMP, and depicted in the Map of the IMP. Refer to ***Section 4***, ***Section 5***, ***Section 12***, and ***Section 13*** for documentation related to the re-assessment procedures and the frequency of periodic re-evaluation."

CGT has amended its written IMP to further address ***Item 3D***. Within **Section 13**, subpart **13.2** *Periodic Risk Assessment, Data Integration,* the **fifth paragraph** is amended as follows:

"The risk analysis reassessment process consists of the following and is integrated into other processes in the manner represented in Figure 1.1 in ***Section 1 – Introduction***.

"The Reassessment Loop consists of the following components:

- Threat Identification – detailed in ***Section 4 – Threat Identification***
- Risk Analysis – detailed in ***Section 5 – Risk Assessment and Prioritization***
- Preventative & Mitigative Measures – detailed in ***Section 12 – Preventive and Mitigative Measures***
- Continual Evaluation & Reassessment - detailed in the IM Plan ***Section 13 – Continual Evaluation & Reassessment Process***

"The Reassessment Loop is an integral part of the risk analysis process, which consists of the following:

- HCA Identification
- Threat Identification
- Risk Analysis & Prioritization
- Assessment Method Selection
- Baseline Assessment Plan
- Conducting Assessments
- Remediation
- Preventive & Mitigative Measures
- Continual Evaluation & Reassessment"

CGT has amended its written IMP to further address ***Item 3D***. **Section 13**, subpart **13.4.1** *Process for Determination of Re-Assessment Intervals* is amended as follows:

"The overall reassessment procedure follows:

1. Perform Baseline Assessment.
2. Conduct Preventive & Mitigative evaluation of HCA segments.
3. Update IM database and reevaluate threats and risks for each HCA segment as appropriate.
4. Revise selected assessment method if indicated because threats have changed.
5. Select first or next HCA segment for reassessment evaluation.
6. Determine the reassessment interval and method for each threat for each HCA depending upon whether the segment is operating at or above 30% SMYS.
7. Evaluate whether reassessment interval is acceptable considering the impact of corrosion, long seam fatigue crack, and third-party damage, if any, and revise reassessment interval as necessary.
8. Determine whether an OPS Waiver from Reassessment is needed and submit waiver request, if needed.
9. Conduct reassessments and remediation in accordance with IM Plan and document results on Form *F13-1*."

CGT has amended its written IMP to further address ***Item 3D***. Within **Section 5**, subpart **5.6.4** *Prioritization*, the **fifth paragraph** is amended as follows:

"CGT also uses the processes described in ***Section 4 – Threat Identification*** and ***Section 14 – Management of Change Process*** to provide regular updates to the risk assessment process. The processes in ***Section 4 – Threat Identification*** are designed to provide pertinent information from field reports as gathered in Form *F3-1: Field Report on Potential New High Consequence Area (HCA) Along Pipeline Route*. Refer to Section 3.4.8, *New Potential HCAs Discovered by Field Personnel* and 3.6, *Forms* in ***Section 3 – HCA Identification*** for more information."

CGT has amended its written IMP to further address ***Item 3D***. **Section 5**, subpart **5.6.7** *Running the Risk Assessment Model*, is amended as follows:

5.6.7 Running the Risk Assessment Model

"The Technical Services Integrity Management Engineer will confirm that all data (ILI run, DA, One-Call, and Pipe repair or replacements) from the previous year has been

entered into the model by 30 September. The Kiefner Risk Rank Model will be run by 30 November of each year. Review and analysis of the Model results will be complete by 30 December of each calendar year.

"The results of the risk assessment are compared to the previous year's Baseline Assessment Plan. If risk scores indicate a need to change the prioritization, a revised Baseline Plan will be developed. Refer to ***Section 8 –Baseline Assessment Plan*** for information on Baseline Plan development."

***Item 3F*: § 192.917(c)**
"There is no detailed process to assure validation of risk results against company/industry experience."

Response to *Item 3F*:
CGT has amended its written IMP to further address ***Item 3F***. Within **Section 5**, subpart **5.6.5** *Validation of the Risk Method*, the **third and fourth paragraphs** are amended as follows:

"The Kiefner and Associates Model is used by several Pipeline companies for their risk assessments. The model is periodically updated to reflect enhancements and other changes based on operator experience. This provides for validation of the model against industry experience.

"CGT is a member of the Southern Gas Association (SGA). SGA sponsors workshops on Integrity Management, which CGT attends. Additionally, SGA, through their Web site, provides posted information about risk assessment, as well as a mechanism to elicit specific feedback from members. This provides for validation of the model against industry experience."

***Item 4A*: § 192.925(b)(3)(ii)(B)**
"There is no documented process for performing root cause analysis when the operator uncovers problems for which ECDA is not well suited."

Response to *Item 4A*:
CGT has amended its written IMP to further address ***Item 4A***. Within **Section 7a**, subpart **7.8.3.5** *Root Cause Analysis*, the **first six paragraphs, bullets and the numbered section** are amended as follows:

7.6.3.4 Root Cause Analysis:

"CGT will perform a root cause analysis to investigate all significant corrosion activity [D.04.d., RP0502 § 5.6.1]. For the purposes of this document, *significant* is defined as corrosion activity that leads to a metal-loss defect that does not meet the allowable limits established by CGT in ***Section 10 - Remediation***.

"CGT must identify the reason (i.e. root cause) for all significant corrosion [D.04.d., RP0502 § 5.6.1]. A root cause may include:

- Low cathodic protection,

- Interference (e.g., not previously identified),
- Stray currents
- Shielding due to disbonded coatings [D.04.d., RP0502 § 5.6.1].

"If CGT uncovers a root cause for which ECDA is not well suited (e.g., shielding due to disbonded coating), CGT will consider alternative methods of addressing the integrity of the pipeline segment. [D.04.d., RP0502 5.6.2]

"The process for performing root cause analysis when ECDA is not well suited follows (see Figure 6-2 and Section 6.3.1):

1. Determine whether ECDA is the best assessment method required.
2. If ECDA **is not** the best assessment method required:
    a. Determine whether to perform an assessment for third party or external forces damage.
    b. If a pressure test is not indicated, determine whether to perform an ILI.
    c. If an ILI is not indicated, determine whether other technology may provide the most appropriate method.
3. Compare the options evaluated and select the most appropriate method.
4. Document the results and record selected method on Form F6-1.

"CGT should also identify factors that exacerbate or mitigate the cause. The data collected at the excavation site can be used for supporting or refuting root causes and influencing factors.

"CGT must identify all other indications within the pipeline segment where similar root cause conditions exist [D.04.d., RP0502 § 5.9.3]. If CGT identifies other indications where similar root-case conditions exist, CGT must re-evaluate the indications [D.04.d]. CGT should increase the indication severity and/or excavation priority where appropriate."

***Item 4B*: § 192.925(b), § 192.917(a) and (c), and § 192.937(a) and (b)**
"CGT has no documented process to continuously assess for SCC during the direct examination step of the ECDA process. Further, there is no evidence that SCC assessments have been completed for examinations performed to date."

Response to *Item 4B*:
CGT has amended its written IMP to further address ***Item 4B***. Within **Section 7a**, subpart **7.6.3.3** *Data Collection Requirements, Excavations and Data Collection*, the **fifth paragraph** is amended as follows:

"It is CGT's standard practice to always examine the pipe for S.C.C. on any excavation. The results of the examination are documented on the pipeline inspection report. In the event that SCC or mechanical damage is discovered during direct examinations, CGT will consider alternative methods of evaluating the defects [D.04(j)]. CGT must provide information on the discovery to the appropriate department(s) or individual(s) responsible for evaluating the other threat(s)."

***Item 4C*: § 192.925(b)(3)(i)**
"CGT could not identify provisions in its ECDA Plan or more restrictive criteria it applied when conducting the ECDA direct examination step for the first time on a covered segment."

Response to *Item 4C*:
CGT has amended its written IMP to address ***Item 4C*. Section 7a**, subpart **7.6.3.3** *Data Collection Requirements, Data to be Collected on Coating Damage and Corrosion Depth* is amended as follows:

> "More restrictive criteria for initial ECDA applications will include the following additional measurements:
>
> - Corrosion product data [RP0502 §5.4.3.6],
> - Identification, mapping, and measurements of corrosion defects [RP0502 §5.4.3.7, §5.4.3.8];
> - Photographic documentation [RP0502 §5.4.3.9];
>
> "Further, the following "more restrictive criteria" may be applied based on a determination by the Technical Services Supervisor, and based on the findings of the direct examination:
>
> - Consider data collection for other evaluations (unrelated to external corrosion), such as magnetic particle testing for cracks and ultrasonic testing for internal defects [RP0502 §5.4.3.5];"

CGT has amended its written IMP to further address ***Item 4C***. Within **Section 7a**, subpart **7.2.2** *Process*, the **last paragraph** is amended as follows:

> "When ECDA is applied for the first time on a pipeline segment, requirements that are more stringent apply [192.925(b), D.01.b]. These requirements include but are not limited to additional data collection, direct examinations, and post assessment activities. For initial ECDA applications, requirements that are more stringent are used to provide an enhanced understanding of the pipeline integrity with respect to external corrosion."

CGT has amended its written IMP to further address ***Item 4C***. Within **Section 7a**, subpart **7.4.4.1** *Data Collection, Data Collection Requirements*, the **last paragraph and first two bullets** are amended as follows:

> "When ECDA is applied for the first time on a pipeline segment, the pre- assessment must use "more restrictive criteria" [192.925(b)(1)(i), D.01.b]. Further, CGT will also use SMEs when ECDA is applied for the first time.
>
> CGT will use the following as "more restrictive criteria":
>
> - A speculative number of one-calls for the region
> - Review encroachment and foreign-line crossings"
> - All information gathered using GPS will have sub-meter accuracy.

CGT has amended its written IMP to further address ***Item 4C***. Within **Section 7a**, subpart **7.5.4.2** *Conducting Indirect Inspections,* the **paragraphs 9-11** are amended as follows:

> "For regions in which ECDA is being applied for the first time, more restrictive criteria must be used [§192.925(b)2i, RP0502 §4.2.2.2]. Criteria that are more restrictive will include the following:
>
> - Provision of additional training for Indirect Inspection Personnel, or verification of Contractor qualifications in the Contractor's bid package;
> - Provision of additional CGT oversight during inspections."

***Item 5A*: § 192.933(c)**

"The CGT IMP does not have a requirement to develop a schedule that prioritizes evaluation and remediation of anomalous conditions."

Response to *Item 5A*:

CGT has amended its written IMP to address ***Item 5A***. **Section 10,** subpart **10.5.2** *Schedule Preparation* is amended as follows:

> **10.5.2 Schedule Preparation**
> "Upon completion of the assessment, and after the anomalies have been classified as either Immediate, Scheduled, or Monitored, an examination and evaluation schedule will be prepared by Technical Services Engineer using ILI and Pressure Test data or Technical Services Corrosion Technician using DA. The schedule and other relevant information will be shown on Form F10-1 CGT ILI Data Sheet, or Form F10-2 ECDA Data Sheet.
>
> "The schedule shows when an anomaly *must* be examined and evaluated and when it was actually examined and evaluated. In addition, the schedule shows the determination as to whether a repair was required, if the repair was made, the date of the repair, and other necessary information."

CGT has amended its written IMP to further address ***Item 5A***. **Section 10,** subpart **10.5.3** *Repairs* is amended as follows:

> **10.5.3 Repairs**
> "Once the anomaly has been examined and evaluated, a determination is made as to whether or not the anomaly requires repair. If repair is necessary, the repair is typically made within 10 days of the determination. In the event the repair cannot be made within 10 days, the anomaly severity will be determined in accordance with ASME B31.8G and a date will be selected for repair based on the remaining wall thickness and an estimated corrosion rate of 12 mils per year."

CGT has amended its written IMP to further address ***Item 5A***. **Section 10,** subpart **10.5.4** *Reassessment Date* is amended as follows

> **10.5.4 Reassessment Date**
> Re-assessment dates are contingent upon the completion of repairs and the severity of remaining anomalies. Resulting re-assessment dates will be recorded on the Baseline Assessment Plan to provide for future assessments within the required time frame. See Section 8 - Baseline Assessment Plan for further information.

***Item 5B*: § 192.933(d)(3)**
"There are no detailed procedures to describe the process for recording anomalies that are classified as "monitored conditions" and monitoring then during subsequent risk assessments and reassessments."

Response to *Item 5B*:
CGT has amended its written IMP to address ***Item 5B*. Section 10**, subpart **10.4.3** *ILI Anomaly Repair Categorization and Response Procedures: Monitored Conditions* is amended as follows:

> **Monitored Conditions**
> "These conditions do not require an immediate or scheduled examination within the period between assessments. These conditions will be recorded and monitored during subsequent risk assessments and integrity assessments."

CGT has amended its written IMP to further address ***Item 5B*. Section 10**, subpart **10.4.4** *Direct Assessment (DA) Anomaly Repair Categorization and Response Procedures: Monitored Conditions* is amended as follows:

> **Monitored Conditions**
> "These conditions do not require an immediate or schedule examination within the period between assessments. These conditions will be recorded and monitored during subsequent risk assessments and integrity assessments."

***Item 5C*: § 192.933(c)**
"There are no detailed procedures describing a repeatable process by which technical justifications are produced when anomaly evaluation timeframes cannot be met."

Response to *Item 5C*:
CGT has amended its written IMP to address ***Item 5C***. Within **Section 10**, subpart **10.10** *Response when the Schedule Cannot Be Met*, the **third paragraph, bullets, last paragraph** is amended as follows:

> "This pressure reduction will not exceed **365 days** without the documented justification of why the continued pressure reduction will not jeopardize public safety and the appropriate notifications will be made to PHMSA.
>
> [[does this track the language of Section 192.933(c), which was revised effective mid-August?; should it reference the requirement to notfiy PHMSA if the pressure reduction exceeds 365 days?]]
>
> "CGT will document this justification including the following:
> - The technical basis of why it is impractical to meet the schedule for a remediation activity
> - The basis of why the modified schedule will not jeopardize public safety

- The technical justification of why a continued pressure reduction beyond **365 days** would not jeopardize pipeline integrity or public safety
- A revised schedule will be developed and PHMSA will be notified.

"If the prioritized schedule cannot be met, and a temporary reduction in operating pressure or other appropriate action to ensure the safety of the covered segment cannot be achieved, CGT will notify PHMSA (and state or local pipeline authority as appropriate) as soon as practical in accordance with 49 CFR Part 192.949 and ***Section 20 - Regulatory Interaction***. This notification will include the justification as noted above."

CGT has amended its written IMP to further address ***Item 5C***. **Section 7a**, subpart **7.6.3.3** *Data Collection Requirements* is amended as follows:

Data to be Collected for Analyses
"The minimum data collection requirements will include instructions for conducting integrity analyses in the field. Field analyses will include either ASME B31 G, RSTRENG, or KAPA.

"CGT utilizes a software "toolbox" item called **RSTRENG** to aid with loss safe pressure calculations. CGT establishes allowable limits on the severity of metal loss anomalies. The allowable limit *should* be the "normally accepted level for the pipeline segment (e.g., the maximum allowable operating pressure times a suitable factor for safety)" [RP0502 §5.5.2]."

***Item 5D*: § 192.933(c)**
"The CGT remediation schedule does not provide the criteria in Section 192.933 of the Rule or in ASME B31.8S which is the basis for remediation of the respective anomalies."

Response to *Item 5D*:
CGT has amended its written IMP to address ***Item 5D***. **Section 10**, subpart **10.5.3** *Repairs* is amended as follows:

10.5.3 Repairs
"Once the anomaly has been examined and evaluated, a determination is made as to whether or not the anomaly requires repair. If repair is necessary, the repair is typically made within 10 days of the determination. In the event the repair cannot be made within 10 days, the anomaly severity will be determined in accordance with ASME B31.8G and a date will be selected for repair based on the remaining wall thickness and an estimated corrosion rate of 12 mils per year."

(Continued on next page)

***Item 5F*: § 192.933(a)**
"There is insufficient evidence in the CGT remediation records to demonstrate that an anomaly is unlikely to threaten the integrity of the pipeline before the next scheduled reassessment. The operator relies upon contractor's reports to provide this evidence, however the contractor's reports do not provide sufficient details for these conclusions. For example, safe pressure calculations need to be documented to demonstrate the basis of safety until reassessments are performed."

Response to *Item 5F*:
CGT has amended its written IMP to address ***Item 5F***. Within **Section 7a**, subpart **7.6.3.4** *Root Cause Analysis, Mitigation*, the **third paragraph** is amended as follows:

> "CGT will document whether or not corrosion is present. If corrosion is present, a Safe Pressure Calculation will be performed. Corrosion and Safe pressure Calculation Records will be performed and retained in accordance with Section 7.6.3.3, *Data Collection Requirements.*"

***Item 6A*: § 192.935(a)**
"The CGT IMP does not include an evaluation of threats, a spectrum of preventive and mitigative (P&M) alternatives, and the potential impact on the identified risks for HCA segments."

Response to *Item 6A*:
CGT has amended its written IMP to address ***Item 6A***. **Section 12**, subpart **12.4.4** *Data Gathering* is amended as follows:

> **12.4.4 Data Gathering**
> "The P&M method selection process begins with the collection of relevant data for each segment. Each segment's project file contains:
> - The segment description from the Kiefner Risk Rank Model and the GIS Database;
> - Segment Risk Assessment results from the Kiefner Risk Rank Model; and
> - Threat Identification and Evaluation from Section 4 of the IMP, Kiefner Risk Rank Model results, and data from the segment project file, including:
>   - Likelihood of Failure
>   - Consequence of Failure
>   - Total Risk Score
>   - Risk Drivers"

CGT has amended its written IMP to further address ***Item 6A***. **Section 12**, subpart **12.4.5** *Selecting Appropriate Preventive & Mitigative Measures* is amended as follows:

> **12.4.5 Selecting Appropriate Preventive & Mitigative Measures**
> "Technical Services and appropriate Operations Managers are responsible for selecting appropriate P&M measures. This activity shall be performed annually, but conducted no later than March 30th.

"Selection consists of an analysis of the information from Section 12.4.4, *Data Gathering*, and considerations of the options for preventive and mitigative measures from *Table 12-1: Preventive & Mitigative Options*. Appropriate preventive and mitigative measures are selected based on the threat drivers. If corrosion is identified as a threat, applicability to non-covered segments with similar material, coating, and environmental characteristics will be evaluated."

CGT has amended its written IMP to further address ***Item 6A***. **Section 12**, subpart **12.4.6** *Documentation* is amended as follows:

12.4.6 Documentation
The covered segment folders within the Integrity Management folders contain documentation on the following:

- Selected preventive and mitigative measures
- Justifications for selected methods
- Scheduled implementation date for preventive and mitigative measures
- Implementation plan, if needed
- Actual implementation date for preventive and mitigative measures

---

***Item 6B*: § 192.917(e)(5)**
"There is a lack of program requirements to ensure that identified corrosion issues that meet the "immediate" classification are evaluated for pipeline segments outside of HCAs."

Response to *Item 6B*:
CGT has amended its written IMP to address ***Item 6B***. **Section 10**, subpart **10.2.2** *Determination of Immediate Repair Conditions, Immediate Conditions Outside of HCAs* is amended as follows:

10.2.2 Immediate conditions outside of HCAs
"Any condition that is classified as an immediate condition whether inside a HCA or outside a HCA will be examined, evaluated, and repaired if necessary, following the requirements of this procedure."

***Item 7A*: § 192.911(k)**
"The criteria used to determine when an MOC form is used to track physical changes to the pipeline are inadequate. Physical changes are being made to the pipelines that are not being tracked using the MOC process."

Response to *Item 7A*:
CGT has amended its written IMP to address ***Item 7A***. **Section 14**, subpart **14.2.4** *Impact on Operations and Maintenance* is amended as follows:

14.1.1 Impact on Operations and Maintenance

Determine if the proposed Change will result in an Operations and Maintenance (O&M) or capital budget project. If the proposed Change will result in a budgeted project, determine if the Change will require a new procedure or design standard or if new training is required.

- If no new standards or training are required, no additional documentation is needed to manage the Change. If outside contractors are used, all required elements of MOC will be covered in the Contract Agreement between CGT and the Contract Company.
- If new standards or training is required then a MOC is required.

Each standard, procedure, and guideline has a MOC element built into the process. The MOC element is outlined in the following manuals:

- As-built of engineering records
- As-built of maintenance records
- Specifications Manual
- Design Standards
- Contract Documentation
- Construction Specifications
- Corrosion Procedures
- Operational Qualification Plan
- Measurement & Regulation Procedure
- Welding Manual

CGT has amended its written IMP to further address ***Item 7A***. **Section 14**, subpart **14.2.5** *Circumstantial Requirements* is amended as follows:

14.2.5 Circumstantial Requirements

"The Qualified Manager(s) and Technical Reviewer(s) are responsible for performing the Technical Review and impact analysis of any proposed Changes, and will determine the impacts of the Change for both the pipeline system and the written IMP.

"A MOC form is required under the following circumstances:

- If the Change is listed in Section 14.2.9, *Typical Instances of Change*, **or**
- If the Change is not a Low-Impact Change per Section 14.2.18, *Low-Impact Activities*, **AND** will not result in an O&M or Capital Project, **or**
- If the Change requires new standards or training."

CGT has amended its written IMP to further address ***Item 7A***. **Section 14**, subpart **14.2.6** *Change Analysis and Documentation* is amended as follows:

14.2.6 Change Analysis and Documentation

"Changes requiring a MOC form will be documented and analyzed using the following framework:

- The MOC form (Form *F14-1*) will be completed and approved prior to the implementation of the Change.

- The level of detail and decision to include all items in the framework are based on the scope of the Change. Any question regarding the level of detail needed should be directed to Technical Services Integrity Management Engineer or the designated Qualified Manager."

CGT has amended its written IMP to further address ***Item 7A***. Within **Section 14**, subpart **14.3** *Forms*, ***Form F14-1*** is amended as follows:

14.3 Forms

Change Approval is mitigated through Form *F14-1*, *Management of Change Approval.*

IMP SECTION 14
MANAGEMENT OF CHANGE
Form 14-1
Revised July 2007

Management of Change Approval

Change Title		Tracking Number	
Location		Box 3 - Type of Change	

Box 1: Description of Proposed Change. Reference 192.909(a)		☐ Permanent	
		☐ Temporary	
		☐ Like Size & Kind	
		3a - If Temporary - List Expected Duration	
		Hours	
		Days	
		Weeks	
		Months	
Box 2: Reason for Change. Reference 192.909(a)		3b - Scheduled Duration Dates	
		Start	
		Complete	
		3c - Actual Duration Dates	
		Start	
		Complete	

Box 4: Does the Change apply to Box 4a? If Yes, Complete Boxes 4a through 4f. Check all that apply. *Reference: 192.909(b)*

NOTE: Any check below requires Agency Notification within 30 days after adopting the Change.

☐ Yes (If Yes, fill Boxes 4a-4f)

☐ No

4a - Potentials of Change:
Does the Change have the Potential to…
- ☐ Substantially affect the IMP's Implementation
- ☐ Significantly modify the IMP
- ☐ Significantly modify the Schedule to implement Req'd Program Elements

4b - Specific Examples (not limited to):
- ☐ Merger or Major Pipeline Acquisition
- ☐ Determination of SCC as a New Threat
- ☐ Introduction of New Assessment Methodology
- ☐ Abandoning an Assessment Method Planned for Use
- ☐ Other ____

4c - OPS, State, or Local Agency Notified	4d - Person Contacted	4e - Phone	4f - Date

Box 5: Type of Change. Any Change that has the potential to affect Pipeline integrity or the System of the written IMP Program

5a - Technical	5b - Physical	5c - Procedural	5d - Organizational
☐ Safety Device Settings ☐ SCADA Settings Programming Logic ☐ Other ____	☐ Change of Product ☐ Newly Identified HCA ☐ Newly Identified Threats ☐ New Risk Factors ☐ Replace Safety Device ☐ Replace Valve ☐ Pipeline Acquisition ☐ Other ____	☐ Repair Remediation ☐ Welding ☐ Pressure Testing ILI ☐ Direct Assessment ☐ Environmental Safety ☐ Risk Analysis ☐ HCA Identification ☐ CP Program Changes ☐ Other ____	☐ Roles & Responsibilities ☐ Organizational Structure ☐ Qualified Personnel ☐ Other ____

Box 6: Technical Review and Analysis of Impacts of the Change. Attach all supporting documentation

6a - Technical Review Activity	6b - Assigned To	6c - Date Completed

Box 7: Required Change Implementation Activities

7a - Internal	7b - External
☐ Qualification of Staff ☐ Additional Training ☐ Communication of the Change	☐ Acquisition of Work Permits ☐ Environmental Safety Permits

Box 8: Required Approvals

Role	Printed Name	Signature
8a - Initiator		
8b - Technical Reviewer		
8c - Qualified Manager		
8d - Qualified IMP Manager		

Attach all Supporting Documentation to this Form.

***Item 7B*: § 192.911(k)**
The MOC process does not provide sufficient procedures to describe how a change identifies affected documentation and how the change is communicated to affected parties.

Response to *Item 7B*:
CGT has amended its written IMP to address ***Item 7B***. **Section 14**, subpart **14.2.7** *MOC Framework - Scope* is amended as follows:

14.2.7 MOC Framework – Scope

"The framework for managing Change includes, at a minimum, the following items:

- A description of what is being changed;
- A description of conditions present prior to the Change; and
- A description of conditions following implementation of the Change.

"Additionally, the Standard Framework for managing Change includes information specific to Changes of a Technical, Physical, Procedural or Organizational nature; the specific rationale for implementing the Change; includes approval authorities; an analysis of the implications of the Change implementation; and documentation requirements.

Technical Changes

"Box 5a on Form *F14-1* includes the following choices for Technical Changes:

- Safety Device Settings
- SCADA Settings Programming Logic
- Other Changes (write-in)

"Descriptions of the Change scope must be attached to the MOC Form *F14-1*. The Change initiator will describe the technical Change that is taking place, and will include all technology, procedures, equipment or operating parameters that will be impacted as a result of the Change.

Physical Changes

"Box 5b on Form *F14-1* includes the following choices for Physical Changes:

- Change of Product
- Newly Identified HCA
- Newly Identified Threats
- New Risk Factors
- Replace Safety Device
- Replace Valve
- Pipeline Acquisition
- Other changes (write-in)

"The Change initiator shall include all Physical Changes that will occur as well as the conditions of the surrounding area at the time of the Change. For example, if pipe is replaced, coating and backfill conditions at the time of the Change would be included.

"Further, the Change initiator shall also attach all concurrent topics of change. For example, if a type of equipment is being replaced there will be a concurrent procedural addition or Change that shall also be specified.

"Descriptions of the change scope must be attached to the MOC Form *F14-1*.

Procedural Changes

"Box 5c on Form *F14-1* includes the following choices for Procedural Changes:

- CP Program Changes
- Direct Assessment
- Environmental / Safety
- HCA Identification
- Pressure Testing / ILI
- Repair/Remediation
- Risk Analysis
- Welding
- Other (write-in)

"Descriptions of the Change scope must be attached to the MOC Form *F14-1*. The Change initiator will describe the procedure, standard, or resource document that will be added, any impacted personnel, and additional training required as a result of the Change.

Organizational Changes

"Box 5d on Form *F14-1* includes the following choices for organizational Changes:

- Organizational Structure
- Qualified Personnel
- Roles & Responsibilities
- Other (write-in)

"Descriptions of the Change scope must be attached to the MOC Form *F14-1*. The scope of Change shall include a list of impacted internal departments as well as affected external organizations or Customers.

"The attachment will include major responsibilities of the departments impacted, how department responsibilities will continue through transition to the new organization, and how major responsibilities of the previous organization will be managed in the new organization."

(Continued on next page)

CGT has amended its written IMP to further address ***Item 7B***. **Section 14**, subpart **14.2.8** *Change Rationale* is amended as follows:

14.2.8 Change Rationale

"The purpose of the Change must be listed. Include the reason for its need, as well as benefits and drawbacks of its implementation. This description should cover:

- Why the Change is required,
- The source of the Change, and
- Whether it is driven by operational needs **or** is a *result* of IMP."

CGT has amended its written IMP to further address ***Item 7B***. **Section 14**, subpart **14.2.9** *Approval Authority* is amended as follows:

14.2.9 Approval Authority

"A proposed Change may cause several phases of revision and approval. When this is the case, each step of the Change's Approval process must be documented. At a minimum, the name and title of each named person must be included.

- Identify who is initiating the Change. List the individual ultimately responsible for the MOC, as well as all individuals with input in the recommendation process.
- Identify individuals responsible for approving the Change.

NOTE:	The Technical Services Integrity Management Engineer or designated Qualified Manager must approve all MOCs."

CGT has amended its written IMP to further address ***Item 7B***. **Section 14**, subpart **14.2.10** *Documentation Requirements, Analysis* is amended as follows:

14.2.10 Documentation Requirements: Analysis

"Analyze and record the following:

- Effects on other programs, plans, procedures, or standards, including the IMP
- Effects to equipment or systems
- Impacts on staff or staffing levels
- Impacts to other departments
- Impacts to Customers or regulatory agencies
- Safety/ environmental impacts
- Data source Changes
- Necessity for work permits

"The analysis shall be recorded, documented and retained within its respective MOC file."

CGT has amended its written IMP to further address ***Item 7B***. **Section 14**, subpart **14.2.11** *Additional Documentation Requirements* is amended as follows:

14.2.11 Additional Documentation Requirements

"Upon completion of the Technical Review and Impact Analysis, relevant findings will be documented and attached to the MOC Form for documentation purposes. See ***Section 16 – Record Keeping*** for additional documentation requirements."

CGT has amended its written IMP to further address ***Item 7B***. **Section 14**, subpart **14.2.12** *Communication of Change to Affected Parties* is amended as follows:

14.2.12 Communication of Change to Affected Parties

"Communicate each instance of Change to relevant impacted stakeholders. At a minimum, identify the individual responsible for notifying stakeholders of a Change, as well as the impacted parties.

"Consider all possible stakeholders who may or could be affected by a Change. Impacted groups may include, but are not limited to the following:

- CGT's Personnel and Management
- Customers
- Regulatory Agencies
- Industry Groups
- Suppliers

NOTE: The method of communication to Affected Parties is contingent upon the type of item Changed."

CGT has amended its written IMP to further address ***Item 7B***. **Section 14**, subpart **14.2.13** *Time Limitations* is amended as follows:

14.2.13 Time Limitations

Identify when the Change must be implemented and the Reason for the deadline, if required.

CGT has amended its written IMP to further address ***Item 7B***. **Section 14**, subpart **14.2.17** *Implementation of the Change* is amended as follows:

14.2.7 Implementation of the Change

Upon completion of the previous procedural steps and the formal approval of the Change by the Qualified Manager, the implementation of the Change will commence.

(Continued on next page)

CGT has amended its written IMP to further address ***Item 7B***. Within **Section 14**, subpart **14.3** *Forms*, ***Form F14-1*** is amended as follows:

14.3 Forms

Change Approval is mitigated through Form *F14-1*, *Management of Change Approval.*

Management of Change Approval

Change Title		Tracking Number	
Location			

Box 1 Description of Proposed Change Reference 192.909(a)		Box 3: Type of Change	
		☐ Permanent	
		☐ Temporary	
		☐ Like Size & Kind	
		3a - If Temporary, List Expected Duration	
		Hours	
		Days	
		Weeks	
		Months	

Box 2 Reason for Change Reference 192.909(a)		3b - Scheduled Duration Dates	
		Start	
		Complete	
		3c - Actual Duration Dates	
		Start	
		Complete	

Box 4: Does the Change apply to Box 4a? If yes, Complete Boxes 4a through 4f. Check all that apply. *Reference: 192.909(b)*

NOTE: Any check below requires Agency Notification within 30 days after adopting the Change

	4a - Potentials of Change: Does the Change have the Potential to...	4b - Specific Examples (not limited to):
☐ Yes (If Yes, fill Boxes 4a-4f)	☐ Substantially affect the IMP's Implementation	☐ Merger or Major Pipeline Acquisition
	☐ Significantly modify the IMP	☐ Determination of SCC as a New Threat
	☐ Significantly modify the Schedule to implement Basic Program Elements	☐ Introduction of New Assessment Methodology
☐ No		☐ Abandoning an Assessment Method Planned for Use
		☐ Other

4c - OPS, State, or Local Agency Notified	4d - Person Contacted	4e - Phone	4f - Date

Box 5 Type of Change Any Change that has the potential to affect Pipeline integrity on the system or the written IMP Program

5a - Technical	5b - Physical	5c - Procedural	5d - Organizational
☐ Safety Device Settings	☐ Change of Product	☐ Repair Remediation	☐ Roles & Responsibilities
☐ SCADA Settings Programming Logic	☐ Newly Identified HCA	☐ Welding	☐ Organizational Structure
	☐ Newly Identified Threats	☐ Pressure Testing - ILI	☐ Qualified Personnel
	☐ New Risk Factors	☐ Direct Assessment	
	☐ Replace Safety Device	☐ Environmental - Safety	
	☐ Replace Valve	☐ Risk Analysis	
	☐ Pipeline Acquisition	☐ HCA Identification	
		☐ CP Program Changes	
☐ Other________	☐ Other________	☐ Other________	☐ Other________

Box 6 Technical Review and Analysis of Impacts of the Change Attach all supporting documentation

6a - Technical Review Activity	6b - Assigned To	6c - Date Completed

Box 7: Required Change Implementation Activities

7a - Internal	7b - External
☐ Qualification of Staff	☐ Acquisition of Work Permits
☐ Additional Training	☐ Environmental - Safety Permits
☐ Communication of the Change	

Box 8 Required Approvals

Role	Printed Name	Signature
8a - Initiator		
8b - Technical Reviewer		
8c - Qualified Manager		
8d - Qualified IMP Manager		

Attach all Supporting Documentation to this Form.

Item 7C: **§ 192.911(k)**
"The MOC process does not have provisions to ensure that integrity management system changes are properly reflected in the pipeline system and that pipeline system changes are properly reflected in the integrity management program."

Response to *Item 7C*:
CGT has amended its written IMP to address ***Item 7C***. **Section 14**, subpart **14.2.3** *Impact on Departments and Documentation* is amended as follows:

> **14.2.3 Impact on Departments and Documentation**
>
> Determine if the proposed Change affects other Departments, Policies, Plans, or Procedures. MOC affects all departments within CGT who influence the life cycle of the asset. This includes anyone influencing the integrity of CGT transmission pipelines and facilities because of Changes to design, material selection, construction, testing, initial inspection, operation, or maintenance of pipelines and related facilities including, but not limited to:
>
> - Communications
> - Engineering, Design, Technical Services, GIS, Drafting and IMP
> - Field Operations, Construction
> - Gas Control, SCADA
> - Measurement & Regulation, compression

CGT has amended its written IMP to further address ***Item 7C***. **Section 14**, subpart **14.2.4** *Impact on Operations and Maintenance* is amended as follows:

> **14.2.4 Impact on Operations and Maintenance**
>
> Determine if the proposed Change will result in an Operations and Maintenance (O&M) or capital budget project. If the proposed Change will result in a budgeted project, determine if the Change will require a new procedure or design standard or if new training is required.
>
> - If no new standards or training are required, no additional documentation is needed to manage the Change. If outside contractors are used, all required elements of MOC will be covered in the Contract Agreement between CGT and the Contract Company.
>
> - If new standards or training is required then a MOC is required.

Item 8A: § 192.911(1)
"CGT extensively uses contracted services to accomplish important aspects of its IMP. In many areas, the Inspection Team noted that CGT relies on its contractors to perform IMP related work without sufficient guidance and quality assurance procedures and processes."

Response to *Item 8A*:
CGT has amended its written IMP to address ***Item 8A***. **Section 15**, subpart **15.4.7** *Control of Outside Resources* is amended as follows:

15.4.7 Control of Outside Resources

"CGT uses various outside resources to perform pipeline integrity services on the pipeline system. When these services are required, CGT assures the quality of the process is maintained and documented by:

- Ensuring all personnel performing a OQ covered task are qualified for the task (**M2** See ***Section 2 – Roles and Responsibilities***, *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
- Ensuring all personnel have the knowledge, are trained, and are qualified per the requirements of ***Section 2***, ***Section 18 – Personnel Knowledge & Training***, and §192.915 (**M2** See *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
- Ensuring the ILI Procedure is properly implemented (**M3** See *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
- Ensuring the appropriate Pressure Test Procedure is properly implemented (**M3** See *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
- Ensuring all Direct Assessment Procedures (ECDA, ICDA, SCCDA) are implemented properly (**M3** See *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
- Performing oversight for all third-party services (ILI, DA, Pressure tests) associated with pipeline integrity. This oversight includes direct observation of all assessment activities performed while on CGT premises. (**M3** See *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)

"All activities performed, products delivered and records developed by outside contractors and consultants shall be consistent with the requirements of the IMP and the quality control plan discussed in this Section. Contractors will be provided with IM Program requirements. The contracts with these outside parties shall contain the essentials of these requirements."

***Item 8B*: § 192.915(a), (b), and (e)**
"CGT has not established qualification requirements for personnel participating in IMP activities, including in-house personnel responsible for evaluating assessment results."

Response to *Item 8B*:
CGT has amended its written IMP to address ***Item 8B***. **Section 15**, subpart **15.4.7** *Control of Outside Resources* is amended as follows:

> **15.4.7 Control of Outside Resources**
>
> "CGT uses various outside resources to perform pipeline integrity services on the pipeline system. When these services are required, CGT assures the quality of the process is maintained and documented by:
>
> - Ensuring all personnel performing a OQ covered task are qualified for the task (**M2** See ***Section 2 – Roles and Responsibilities***, *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
> - Ensuring all personnel have the knowledge, are trained, and are qualified per the requirements of ***Section 2***, ***Section 18 – Personnel Knowledge & Training***, and §192.915 (**M2** See *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
> - Ensuring the ILI Procedure is properly implemented (**M3** See *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
> - Ensuring the appropriate Pressure Test Procedure is properly implemented (**M3** See *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
> - Ensuring all Direct Assessment Procedures (ECDA, ICDA, SCCDA) are implemented properly (**M3** See *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
> - Performing oversight for all third-party services (ILI, DA, Pressure tests) associated with pipeline integrity. This oversight includes direct observation of all assessment activities performed while on CGT premises. (**M3** See *Table 2-3: Cross Reference of CGT IM Positions with 192.915*)
>
> "All activities performed, products delivered and records developed by outside contractors and consultants shall be consistent with the requirements of the IMP and the quality control plan discussed in this Section. Contractors will be provided with IM Program requirements. The contracts with these outside parties shall contain the essentials of these requirements."

CGT has amended its written IMP to further address ***Item 8B***. **Section 18**, subpart **18.2.2.1** *Persons Who Determine Appropriate Assessment Tools* is amended as follows:

> **18.2.2.1 Persons Determining Appropriate Assessment Tools**
>
> "The Technical Services Engineer shall select the appropriate assessment tool based on the threats to be assessed using Form *F6-1* in ***Section 6*** of the IMP. The Technical Services Engineer is qualified to perform this task per the knowledge

acquired throughout his professional career, professional training, workshops attended, and other professional development. The Technical Services Engineer's qualifications are reviewed and approved by the Technical Services Supervisor.

"A record of the qualifications is retained in the individual Technical Services Engineer's personal qualifications folder in the Integrity Management files."

CGT has amended its written IMP to further address ***Item 8B***. **Section 18**, subpart **18.2.2.2** *Persons Who Perform Assessments* is amended as follows:

18.2.2.2 Persons Who Perform Assessments

"In-line inspection and pressure testing activities are performed by contract personnel and overseen by the Technical Services Engineer. These contract personnel qualifications are reviewed by the Technical Services Engineer. A record of the qualifications of contract personnel is maintained in the project file for each specific contract.

"Direct Assessment is performed by contract personnel, overseen by the Technical Services Engineer. These contract personnel are qualified to perform the necessary tasks in accordance with the CGT's Operator Qualification Program. A record of the Qualifications of Contract personnel is maintained in the Safety and Compliance Department."

CGT has amended its written IMP to further address ***Item 8B***. **Section 18**, subpart **18.2.2.3** *Persons Who Evaluate Results* is amended as follows:

18.2.2.3 Persons Who Evaluate Results

"The Technical Services Engineer shall evaluate the results of the Integrity Assessments to determine accuracy and completeness. The Technical Services Engineer is qualified to perform this task per the knowledge acquired throughout his professional career, professional training, workshops attended, and other professional development.

"A record of the qualifications is retained in the individual Technical Services Engineer's Personal Qualifications folder in the Integrity Management File Cabinet."

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