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**§ 195.446 Control Room Management**

	<b>Control Room Management Manual (CRM)</b>				
	<b>Ref:</b>	49 C.F.R. § 195.446, API RP 1165, API RP 1168	<b>Eff. Date:</b>	2/12/2016	<b>Rev. #:</b>



**Cheyenne Rail Hub, LLC (CRH)**  
**Control Room**  
**Management Manual (CRM)**  
**49 CFR 195.446**

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**Cheyenne Rail Hub, LLC**  
**Control Room Management Manual**

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## 1.0 Introduction

### 1.1 Introduction

The Cheyenne Rail Hub (CRH) Control Room Management Manual is the primary pipeline safety compliance tool for all control room management rules. It describes those activities required by the applicable federal and state pipeline safety regulations for CRH' pipeline operations.

The Control Room Management Compliance manual shall be reviewed at least once each calendar year, not to exceed 15 months.

Some requirements may be deviated from in accordance with the procedure in Section 1.7 Deviations to Manual (49 C.F.R. § 195.446 [j]) of this manual as certain conditions warrant, but they may not be relaxed to less than minimum applicable regulatory requirements.

CRH Management will coordinate and document any changes to this manual and will provide format, editorial and composition assistance, and distribution supervision of the manual.

The intent of this manual is to describe what must be accomplished to: (1) comply with the various federal and applicable state pipeline safety regulations; and (2) promote safety for the public, property, employees, and the facilities.

#### 1.1.1 Applicable Companies / Facilities

Unless otherwise stated herein, the procedures in this manual apply to CRH.

This manual is applicable to CRH as of the effective dates listed in Section 1.5 Effective/Implementation Dates. This manual does not apply to activities conducted prior to the implementation of this manual or after the manual is no longer applicable to the CRH facility.

The Control Room Management Manual must be made readily available at all locations that meet the definitions of "Control Room" and "Controller" in Section 2.0 Definitions of this manual.

Both hardcopy and electronic versions may constitute availability for the purposes of this manual.

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**1.2 Scope**

This manual applies to all Controllers what work for or on the CRH pipeline, operating or maintaining its assets. Additionally this outlines the requirements for training and compliance for the operator. This CRM also outlines the requirements for management of the CRH facility.

The CRH Control Room Manual shall meet or exceed the requirements outlined within 49 CFR § 195.446, API 1165, and API 1168.

**1.3 Changes to Procedures**

CRH Management is responsible for making any changes to procedures in this manual.

Any changes to procedures in this manual must be documented by records and be made available for review during compliance inspections. Changes will be implemented through the CRH Management of Change (MOC) process, which demonstrates compliance with the applicable federal and state pipeline safety regulations. Manual revisions that do not affect procedures will be documented in the Revision Log.

[Reference: *CRH Management of Change Procedure*]

**1.4 Approval**

The Control Room Management Manual is approved as of February, 12, 2016

**1.5 Effective / Implementation Dates**

This manual is effective as of February 12, 2016 and implemented as of February 12, 2016 in accordance with the applicable federal and state pipeline safety regulations. Subsequent changes to this manual will be effective as of the new effective date listed in this manual.

**1.6 Validation**

Once this manual has been implemented, CRH Management must submit it in a timely manner to the applicable federal or state pipeline safety regulatory agencies upon request. (49 CFR § 195.446 [i])



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### 1.7 Manual Deviations

CRH Control Room may approve deviations to this manual, but only if the deviation does not relax this manual's requirements below those required by the applicable federal or state pipeline safety regulations. If the CRH Terminal Manager is not available, the Assistant Terminal Manager may approve deviations on the advice of the supervision of the Control Room Personnel. Deviations shall be implemented through the CRH MOC process and shall become permanent records within the control room.

*[Reference: CRH Management of Change Procedure]*

### 1.8 Records

CRH must maintain records that demonstrate compliance with the requirements of this manual for review during inspection.

CRH Control Room shall maintain all records indefinitely.

### 2.0 Definitions

Term and their definitions associated with this manual follow in the table below:

TERM	DEFINITIONS
Abnormal/Emergency Operating Conditions	An abnormal/emergency operation is caused by operating limits exceeding design limits due to a pressure, flow rate, or temperature change outside the limits of normal conditions or an unexpected loss of commodity containment <i>which poses an immediate threat</i> to safety, property, and the environment and requires facility isolation to mitigate the situation.
Abnormal Operating Condition (AOC)	An abnormal operating condition is a condition identified by the operator that may indicate a malfunction of a component or deviation from normal operations that may: (1) indicate a condition exceeding design limits; and/or (2) result in a hazard(s) to persons, property or the environment.
Alarm	An audible or visible means of indicating to the Controller that equipment or processes are outside operator-defined, safety-related or operational parameters.



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Change Management (MOC)	Process used by pipeline operators to manage changes to their facilities and processes, organizations, and documents to ensure that changes are adequately identified, planned, controlled and communicated.
Control Room	An operations center which is staffed by personnel who are charged with the responsibility of remotely monitoring and operations/controlling of pipeline facility.
Controller	A qualified individual who remotely monitors and controls the safety-related operations of a pipeline facility via a SCADA system from a control room and who has operational authority and accountability for the remote operational functions of the pipeline facility.
Emergency	A condition that presents an immediate hazard to persons, property or the environment.
Event	Any unplanned occurrence that may negatively impact pipeline operations in the judgment of the pipeline operator.
Fatigue Management	A data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles and knowledge as well as operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness.
Supervisory Control and Data Acquisition System (SCADA)	A computer-based system or systems used by a Controller in the Control Room that collects and displays information about a pipeline facility and may have the ability to send commands to the pipeline facility.

### 3.0 Roles and Responsibilities

The following responsibilities apply to Controllers who have successfully completed operator qualifications and who have been formally qualified to operate the pipeline facilities via the SCADA system.

#### 3.1 Normal Operations (49 CFR § 195.446[b][1])

Within normal operations of the CRH system the control operator is responsible for the following:

- Ensuring safety and security of CRH personnel and property.
- Overall management of CRH pipeline and tank farm.
- Ensure proper operations of the CRH pipeline during product movements. (i.e. MOP/MAOP, flowrates, valve operations, tank levels)
- Monitor CRH SCADA for any alarms.



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- Communicate with CRH operators in the field or during train loading operations.
- Manage rail rack loading operations and Yardmaster operations.
- Documenting all operations and needed paperwork.
- Log shift activity in CRH Control Room Log.
- Manage shift turn over with CRH/EMS personnel.
- Start-up / Shut-down the CRH pipeline within the appropriate MOP/MAOP.

### 3.2 Abnormal Operations (49 CFR § 195.446[b][2])

The following responsibilities of the CRH operators during abnormal operating conditions:

- Responding to site emergencies and alarms that may trigger.
- Notify proper CRH personnel and emergency personnel (i.e. CRH managers, 911, fire, emergency services, OSRO.)
- Investigating abnormal conditions other issues.
- Document AOC's, investigations and mitigations.
- Working with CRH Management to re-instate normal operations of the CRH pipeline.

### 3.3 Emergency Operations (49 CFR § 195.446[b][3])

The following are roles and responsibilities for the CRH control operator during the time of Emergency Operations.

- Notifying appropriate personnel (i.e. CRH Management, Emergency Services, 911.)
- Document situations (i.e. times, location, situations, and mitigations process.)
- Site security and control during emergency situations.

### 3.4 Shift Change and Responsibility Handovers (49 CFR § 195.446[b][4])

The following are roles and responsibilities for the CRH Control Operator during the shift changing process:

- Endure shift activity is documented in the CRH control log, and entry is signed prior to being relieved from shift.
- Make Contact with EMS if turning SCADA and security cameras over. (CRH SOP 5.0 Pipeline Turnover)
- Discuss safety and operation information with the relieving crew.
- Review pertinent paperwork with relieving crew.
- Ensure relief has established positive control of system and assets prior to leaving shift.

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**4.0 Controller Information (49 CFR § 195.446 [c])**

The Operator (CRH) will supply its control operators with required information, tools, process and procedures to carry out the roles and responsibilities defined for the facility, as per 49 CFR § 195.446 [c].

**4.1 Pipeline SCADA Displays and API RP 1165 (49 CFR § 195.446 [c][1])**

CRH will have full implementation of API Recommended Practice (RP) 1165, this document outlines the guidelines for recommended practices for the use of SCADA within the CRH facility. CRH management shall issue a formal memorandum for any and all articles within 1165 RP's that aren't utilized within the facility as per 49 CFR § 195.446 [c][1].

**4.2 Point-to-Point Verification (49 CFR § 195.446 [c][2])**

CRH shall conduct a point-to-point verification between SCADA controls and CRH field equipment when:

- Field Equipment has been changed, replaced or added
- When safety sensitive changes have been made to the CRH pipeline or SCADA system.
- 

**4.3 Internal Communications Plan (49 CFR § 195.446 [c][3])**

CRH shall test and validate any and all internal communications for the use of manual operations in the event the remote operations fail. This test will be conducted at least once a calendar year, but not to exceed 15 months; per 49 CFR § 195.446 [c] [3].

Testing of the internal manual operations will be documented, such testing should be; but not limited to:

- Reduction in flow rates on the pipeline.
- What systems can be operated manually without SCADA?
- Shut down of the pipeline operations.
- Who takes over control, when do they, and who needs to be informed of the situation.

**4.4 Backup SCADA System (49 CFR § 195.446 [c][4])**

Backup SCADA systems for CRH shall be tested at least once a calendar year, not to exceed 15 months; per (49 CFR § 195.446 [c][4]. Testing of the backup system should be documented and include; but not limited to:

- How the testing was conducted for the system.
- Date and time test was conducted.
- What equipment and personnel was used to conduct test.
- What was the outcome of the test?



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The CRH backup control is located at Energy Maintenance Services (EMS) at 2000 Bering Drive, Suite 600, Houston, Texas, 77057.

### 4.5 Shift Changes (49 CFR § 195.446 [c][5], API 1168 § 5)

Shift change within CRH takes place with the current crew and oncoming crew. The oncoming crew needs to be briefed on all aspects of what took place on the previous shift.

Below is a list of some items that may be covered during shift change:

- Normal Operations
- Abnormal Conditions
- Product Movement Schedules (Inbound/Outbound Pipelines)
- Paperwork Review
- Security Issues
- Rail Schedules
- Contractors onsite
- Maintenance Work
- Verification of desk log entry

### 4.6 Interfacing with the Public (API 1168 § 4.3)

CRH control operators must use the following guidelines when contacted by the public (API 1168 § 4.3).

- Determining nature of contact and taking action
- Providing information to the contacting party
- Notifying appropriate CRH personnel
- Contact and notify appropriate external personnel
- Documenting all details of the contact and the actions taken

Additionally CRH control operators will be trained in the process and procedures outlined in the CRH Emergency Response Plan (ERMP) and Operations & Maintenance Manuals (O&M)

### 4.7 Non-Controller Operations Authorities and Responsibilities (API 1168 § 4.3)

CRH management has defined the authorities and associated responsibilities for non-controller personnel for normal operations, AOC's, AO's and emergencies that may impact the CRH control room operations. Associated responsibilities may include:

- Provide control room operational decision making
- Provide oversight and QA for safe operations
- Ensure correct actions are taken base on situations



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- Ensure only qualified (OQ'd) personnel have access to operate CRH systems
- Verify all CRH personnel are notified of AOC's, AO's and all emergencies
- Confirm all external communications have been made to effected parties if necessary
- Adjusting alarms
- Adjusting CRH field/internal equipment
- Designated personnel for authorization for CRH system restarts
- Managing distractions
- Notifying/Contacting Emergency Services (i.e. fire, paramedics, police)
- Validation of contact before activities commence that may impact normal operation.

### 5.0 Fatigue Management (49 C.F.R. § 195.446[d], API 1168 § 7)

CRH has established work schedules to ensure proper controller rotation and sleep schedules in accordance with 49 CFR § 195.446 [d], API 1168 § 7). These processes ensure the safe and efficient operation of the facility assets and personnel.

#### 5.1 Shift Lengths and Rotations (49 CFR 195.446 [d][1])

CRH has established multiple shift schedules to ensure controllers are receiving ample time off for a minimum of 8-hours of rest cycle. The standard daily shift ranges from 8-12 hours on duty, with a 12-16 hour off cycle. Shifts are **NOT** to exceed 4 days consecutive without the approval of CRH management. A shift shall **NOT** exceed 12 consecutive hours without the approval CRH management. In a case were the shift must be extended, CRH management must ensure that the employee is given ample rest cycles (may need to expand past 8-hours).

*[Reference: Appendix C- CRH Work schedules]*

#### 5.2 Fatigue Education (49 CFR 195.446 [d][2][3])

CRH is dedicated to safety of its personnel and assets through the use of training and educating of controllers. This educational training will identify ways to mitigate fatigue through:

- Proper sleep cycles
- Nutrition
- Exercise
- Stress management
- Safe work practices

All training documentation must be kept in the employee training files and retained for three (3) years.

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**6.0 Alarm Management Plan (49 C.F.R. § 195.446[e], API 1168 § 10.5)**

CRH identifies SCADA alarm protocols through the use of the CRH issued Standard Operating Procedures (SOP). These SOP's shall be reviewed by CRH management at least once a calendar year, not to exceed 15 months.

If there is a significant change to the procedure then CRH management shall update the SOP and train the controllers on the changes, to ensure safe work practices. CRH management shall issue a Management of Change Memo for the updated changes to the process and procedures. These files will be retained in the terminal operations office for three (3) years.

*[Reference: CRH Standard Operating Procedures]*

**7.0 Change of Management (49 C.F.R. § 195.446[f], API 1168 § 8)**

CRH validates all facility operational impact changes through a Management of Change form. To ensure safe operations and facility efficiency CRH management will review all MOC's that impact control room and field operations. Some reasons for a MOC may include:

- Change to process or procedure
- Addition of new equipment
- Change to alarms or other safety sensitive equipment
- Maintenance of segments (i.e.... extended durations of lock out tag out)
- Change to safety or environmental process

All CRH field personnel are required to make contact with the CRH control room during emergency conditions, and when making changes that will impact the CRH control room.

**8.0 Operating Experience (49 C.F.R. § 195.446 [g], API 1168 § 9)**

CRH management shall conduct an annual lessons learned meeting, this meeting will allow the terminal to grow and increase safety and efficiencies within the facility. Management may discuss items such as:

- Training
- Facility Equipment
- Critical lessons learned
- SCADA configurations/ changes
- Inadequate training
- Equipment failures/ additions
- Preventative maintenance plans
- Near misses
- Facility/Personnel Incidents
- Change of Management Process



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- Upcoming audits
- Compliance Tracking
- Third party contractor performance
- Controller fatigue

### 9.0 Training (49 C.F.R. § 195.446[h], API 1168 § 10.8)

CRH has established a controller training program, this program shall be reviewed once a calendar year, not to exceed 15 months.

CRH management shall ensure all controllers are fulfilling controller training requirements as outlined by facility requirements. Employee training to include:

- Operator Qualifications (OQ)
- Safety Training
- Emergency Response Procedure (ERMP)
- Operations & Maintenance (O&M)
- Standard Operating Procedures (SOP)
- Vehicle Training
- Normal Operations
- Alarm Management
- Abnormal Conditions
- Table top drills
- Mock drills - emergency response
- First-aid, CPR, and AED training
- Blood borne pathogens
- Fatigue management
- Rail safety
- Equipment inspections
- Facility communications

CRH shall use a variety of practices to conduct training for its controllers. Training practices shall include the use of Computer Based Training (CBT's), Tabletop dills, classroom discussion, supervised on-the-job training (OJT), and video training. These different practices shall ensure that all controllers are proficiently trained in normal pipeline operations, abnormal operating conditions, and in emergency operations (*49 CFR § 195.446 [h][4]*).

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## 10.0 Appendix A

### 10.1 Emergency Contacts

Name	Emergency Phone Number
Jeremy Morris	307-640-7081
Robert Seifried	307-640-0610
Dan Withers	713-471-4265
Bob Newell	727-643-7287
Steve Magness	405-535-6077
Ben Schoup (Arcadis)	307-684-5891/307-299-5950
Clean Harbors (OSRO)	1-800-oiltank (645-8265)
Energy Management Services (EMS)	Control Room-713-595-7642





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### 11.3 CRH Change of Management Form (MOC)

MANAGEMENT OF CHANGE :		Page 1 of 1	
Facility:		Process Involved	
Proposed Change Date: 5/6/2015			
Prepared By:	Title:	Date:	
Type of Change -			
Process Technology Facility Equipment Procedural			
DESCRIPTION OF PROPOSED CHANGE AND POTENTIAL HAZARDS			
AUTHORIZATION TO PROCEED WITH CHANGE			
Authorized By:	Title:		
Signature:	Authorized Change Date:		
PSM/RMP PROGRAM DOCUMENTATION <i>(To be completed prior to startup following change)</i>		<i>Circle Answer</i>	<i>Completion Date (if yes)</i>



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Authorized By:	Title:
Signature:	Authorized Start-Up Date:

Have affected personnel (i.e., operations, maintenance, and contract) been informed of and trained in this change?		<i>YES/NO</i>	
--	--	---------------	--

Are operating procedures or maintenance procedures required to be updated as a result of this change?		<i>YES</i>	<i>NO</i>
If yes, have affected personnel been trained in the updated operating procedures?		<i>YES</i>	<i>NO</i>
Is the PHA, Offsite Consequence Analysis, or RMP applicability affected by this change?		<i>YES</i>	<i>NO</i>
If yes, has a hazard assessment update been performed (if needed) and has the revised RM Plan been submitted?		<i>YES</i>	<i>NO</i>
Is process safety information required to be updated as a result of this change?		<i>YES</i>	<i>NO</i>
If yes, has a Pre-startup Safety Review been performed?		<i>YES</i>	<i>NO</i>
AUTHORIZATION FOR STARTUP			



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### 12.0 Appendix C

#### 12.1 CRH Shift Schedules (Day Shift Only)

##### 12.1.1 4-10's

4x 10 hours

WK1	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1	10	10	10	10	off	off	off	40
2	off	off	off	10	10	10	10	40
3	10	10	10	10	off	off	off	40
4	off	off	off	10	10	10	10	40

WK2	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1	10	10	10	10	off	off	off	40
2	off	off	off	10	10	10	10	40
3	10	10	10	10	off	off	off	40
4	off	off	off	10	10	10	10	40

WK3	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1	10	10	10	10	off	off	off	40
2	off	off	off	10	10	10	10	40
3	10	10	10	10	off	off	off	40
4	off	off	off	10	10	10	10	40

WK4	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1	10	10	10	10	off	off	off	40
2	off	off	off	10	10	10	10	40
3	10	10	10	10	off	off	off	40
4	off	off	off	10	10	10	10	40



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### 12.1.2 4-12's (24 Hour Coverage)

4 x 12's

WK1	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1-Days	12	12	12	12	off	off	off	48
2-Days	off	off	off	off	12	12	12	36
3-Nights	12	12	12	12	off	off	off	48
4-Nights	off	off	off	off	12	12	12	36

WK2	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1-Days	off	12	12	12	12	off	off	48
2-Days	12	off	off	off	off	12	12	36
3-Nights	off	12	12	12	12	off	off	48
4-Nights	12	off	off	off	off	12	12	36

WK3	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1-Days	off	off	12	12	12	12	off	48
2-Days	12	12	off	off	off	off	12	36
3-Nights	off	off	12	12	12	12	off	48
4-Nights	12	12	off	off	off	off	12	36

WK4	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1-Days	off	off	off	12	12	12	12	48
2-Days	12	12	12	off	off	off	off	36
3-Nights	off	off	off	12	12	12	12	48
4-Nights	12	12	12	off	off	off	off	36



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### 12.1.3 Training (Day Shift Only)

Month 1								
WK1	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1	12	8	8	12	off	off	off	40
2	off	off	off	12	8	8	12	40
3	off	12	8	8	12	off	off	40
4	off	off	12	8	8	12	off	40
WK2	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1	12	8	8	12	off	off	off	40
2	off	off	off	12	8	8	12	40
3	off	12	8	8	12	off	off	40
4	off	off	12	8	8	12	off	40
WK3	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1	12	8	8	12	off	off	off	40
2	off	off	off	12	8	8	12	40
3	off	12	8	8	12	off	off	40
4	off	off	12	8	8	12	off	40
WK4	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
1	12	8	8	12	off	off	off	40
2	off	off	off	12	8	8	12	40
3	off	12	8	8	12	off	off	40
4	off	off	12	8	8	12	off	40

**§ 195.110 External Loads**

operate at a higher pressure than another, the system must be designed so that any component operating at the lower pressure will not be over stressed.

4. Adequate ventilation must be provided in pump station buildings to prevent the accumulation of hazardous vapors. Warning devices must be installed to warn of the presence of hazardous vapors in the pump station building.
5. A device for the emergency shutdown of a pump station must be provided for every pump station.
6. Each safety device that protects pump station facilities must be tested under conditions approximating actual operations and found to function properly before the pump station may be used.
7. Pumping equipment must be installed on property that is under the control of CRH and that is at least 50' from the boundary of the pump station (fence).
8. It shall be the responsibility of the Pipeline Engineer and each Pipeline manager to comply with these regulations for all work performed.

### 517.3 New Pipe

Any new pipe must be manufactured in accordance with the latest approved edition of API 5L and any additional CRH Pipe Specifications. In addition to this, all new pipe needs to be designed to withstand the internal pressures and external loads (e.g. earthquakes, thermal expansion, vibrations and contractions) anticipated for the pipeline system. In providing for expansion and flexibility, section 419 of AMSE/ANSI B31.4 must be followed.

### 517.4 Used Pipe

Any used pipe installed in a system must be of steel of the carbon, low alloy- high strength, or alloy type that is able to withstand the internal pressures and external loads (e.g. earthquakes, thermal expansion, vibrations and contractions) and pressures anticipated for the pipeline system. In providing for expansion and flexibility, section 419 of AMSE/ANSI B31.4 must be followed.

1. The pipe must be of a known specification and the seam joint factor must be determined in accordance with the table listed in § 195.106 (e). If the specified minimum yield strength is not known, it is determined in accordance with § 195.106 (b) or (c) as appropriate.
2. There may not be any--
  - Buckles;
  - Cracks, grooves, gouges, dents or other surface defects that exceed the maximum depth of such a defect permitted by the specification to which the pipe was manufactured; or
  - Corroded areas where the remaining wall thickness is less than the minimum thickness required by the tolerances in the specification to which the pipe was manufactured.
  - Pipe, which does not meet the requirements of this section because of corrosion, may be used if the operating pressure is reduced to be commensurate with the remaining wall thickness.
3. Any components installed above ground must be installed in such a manner as to protect the components from forces exerted by any anticipated loads.
4. Railroad and highway crossings must be installed to withstand dynamic forces exerted by anticipated traffic loads.