Technical Safety Authority of Saskatchewan

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Pressure Relief Path Stop Valve Control Program Manual Requirements

Information Paper IP-2016-07-08

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1. Scope

Used in conjunction with *IP-2016-07-07 Application for the Registration of a Pressure Relief Path (PRP) Stop Valve Control Program*, this information paper details the requirements for the PRP Stop Valve Control program manuals or QMS manual sections.

2. Quality Management System (QMS) Exemption from Manual Requirements

Owners with Quality Management Systems who have PRP Stop Valve Control Programs already in their QMS manuals need not comply with sections:

- General Requirements
- Statement of Authority
- Manual Control and Records

These sections are already part of the QMS manual. QMS owners shall ensure that their registered QMS program complies with the remaining sections of this document.

3. The PRP Stop Valve Control Program Manual Requirements

Applicants for a PRP Stop Valve Control Program shall ensure their manual includes all of the program requirements listed here. Each manual shall include, but not be limited to, the following items:

3.1. General Requirements

The title page, facing page or cover sheet shall contain the following information:

3.1.1. Title Page

A. Full company name.
B. Address of the owner's head office or main site. Additional facility lists may be attached in an additional page or covered in the text of the manual.
C. Brief scope of work.
D. Controlled Manual Number and who was issued the controlled manual. A table for tracking controlled copies shall be included in the text. A controlled copy of the manual shall be submitted for review and shall be issued to TSASK. TSASK will accept electronic copies provided the manual makes provision for electronic controlled copies.
E. Revision number of the manual. A table for tracking the revisions shall be included within the text of the manual.
F. Issue date of the manual.

3.1.2. Table of Contents

Shall reflect the structure of the manual and indicate the revision level of each section. A place for persons accountable for controlling and implementing the PRP Stop Valve Control Program to sign and date as well a place for the TSASK Inspector shall be included. This also may be accomplished by using a revision summary sheet or equivalent form which is included at the beginning of the manual.

3.1.3. Glossary of Terms

For the purpose of clarity all abbreviated titles of personnel, control documents, Codes, Standards, Acts & Regulations, etc. used within this manual shall be defined.

4. Statement of Authority

The following information shall be contained within the Statement of Authority:

A. The scope and purpose of this manual.

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B. Acknowledgement that TSASK has the right to audit or revoke this program at any time.
C. The person on site who is responsible for ensuring these procedures are followed and that the program and the person responsible has the full support of senior management.
D. A statement indicating the company's commitment to safety
E. A statement that the owner has the responsibility to establish and maintain a management system that ensures a vessel is not operated without overpressure protection.
F. A statement that under no circumstances shall these stop valve(s) be closed longer than the duration required to safely perform the functions.
G. The site(s) or location(s) for which this program applies and the name or position of the person on site responsible for the program. This may be a list that is referred to in the text.
H. This page shall be signed and dated by a senior company official of sufficient accountability to be responsible for the program. For clarity, a company organizational chart shall be included for TSASK's review but does not need to be part of the manual.

5. Design Philosophy

The design philosophy shall establish the pressure relief philosophy and specify the reason(s) for the installation of PRP stop valve(s). This section should justify why the PRP stop valve(s) are required in the design of the system.

6. Stop Valve List

An example of an acceptable stop valve list is contained in Appendix I. As a minimum, the following information shall be contained in the list:

A. Site location (if multiple sites are owned).
B. The area or section where the valve is located on site.
C. The identification of each stop valve(s) either by the tag or serial number
D. The applied ASME code clause for each stop valve:
   - ASME BPVC Section VIII, Division I:
     - M-5.5;
     - M-5.6;
     - M-5.7(b)(1);
     - M-5.7(b)(2);
     - M-5.7(b)(3); or
     - M-5.8.
   - B31.3
     - 322.6.1(a);
     - 322.6.1(b); or
     - 322.6.1(c).
E. Mechanical locking elements of the valve(s) shall be described in detail (Padlock, Lead Seals, etc.), if used.

7. Implemented Procedure(s)

The following information shall be contained within the defined control procedure(s) for the operation of the PRP stop valves:

7.1. Administrative Control – mandatory for the application of M-5.6, M-5.7(b)(2) or M-5.7(b)(3)

The following information shall be provided:

A. A documented operation and maintenance procedures.
B. A documented training procedures for operator and maintenance personnel.
C. When M-5.6 is applied, there shall be a documented procedure for continuously monitoring equipment that is isolated from its pressure relief device. This procedure shall ensure that when the equipment or system is isolated from its pressure relief path, an authorized person shall **continuously monitor** the pressure

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conditions of the equipment and shall be capable of responding promptly to disruptions. The procedure shall document the pre-defined actions that are to be taken by the authorized person such as either stopping the source of overpressure or opening alternative means of pressure relief. This authorized person shall be dedicated to this task and shall have **no other duties** when performing this task.

D. When M-5.8 is applied, the procedure shall clearly state that the equipment that is isolated from its pressure relief path is **depressurized and free of liquids**.

E. A written stop valve operational checklist. This checklist shall include as a minimum:
- The approval by signature of the on-site person responsible for these procedures as indicated in the Statement of Authority.
- The name and signature of the person who initiates the order to close the valve(s).
- The name and signature of the person who is assigned to monitor the equipment during the operation of the valve(s).
- The normal operating position of the valve(s).
- The name and signature of the person who closes the valve(s).
- The time the valve(s) are closed.
- The name and signature of the person who returns the valve(s) to normal operating service
- The time the valve(s) are returned to normal operating service.

7.2. Valve Failure Control – mandatory for the application of M-5.6 or M-5.7(b)3

The methodology for preventing an internal failure of a stop valve from either closing and/or blocking the pressure relief path shall be documented in detail in the manual. An example of a potential valve failure could be the installation of gate valves with the valve stem oriented at or below the horizontal position. The methodology to prevent the gate valve from blocking the PRP shall be documented.

7.3. Valve Operation Control – mandatory for the application of M-5.7(b)3

The methodology to ensure that stop valves within the pressure relief path are in their proper (open/close) position shall be included. As a minimum, the mechanical interlocks, instrumented interlocks and three-way valves operation and position verification shall be included.

8. Manual Control and Records

The following information shall be contained within the manual:

8.1. Manual Control

A. Who is responsible for the preparation, revision, distribution and implementation of the PRP Stop Valve Control Program Manual?

B. How will the PRP Stop Valve Control Program Manual be revised? When will the revisions be completed? How the revisions be identified and tracked within the manual?

C. Who is responsible for interfacing with TSASK? Details describing the relationship with TSASK shall be included and all required sign-offs shall be identified.

D. Who is responsible to ensure a current controlled manual has been submitted to TSASK? Are there provisions within the manual for electronic controlled copies of the program manual? TSASK will accept electronic copies of controlled program manuals if a provision does exist.

E. Who will ensure that a controlled copy of the PRP Stop Valve Control Program is available for use by the TSASK Auditor/ Inspector at all locations where this manual is applied? The control of these site manuals shall be detailed with in the manual.

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8.2. Record Retention

A. A complete record of procedures, stop valve operation checklists and internal audits shall be maintained and made available to the TSASK Auditor/Inspector to be reviewed on the 3rd & 6th year selective audit and the 9th year full audit.
B. The record retention period shall be identified.

8.3. Continuous Improvement

A. Manuals shall be submitted to TSASK for review if the:
   - manual is substantially revised;
   - processes or procedures involved in the control of the stop valves are substantially revised;
   - person who signed the Statement of Authority is no longer responsible or part of the organization; or
   - change to the manual is such that TSASK concurrence is required.

B. Acknowledgement within the manual (a statement) that the program owner understands and accepts the requirements of 8.3(A) and shall comply.
C. The addition or removal of sites shall be submitted to TSASK on form *TSK-0015 Update to a Registered PRP SVC Program*.
D. Acknowledgement within the manual (a statement) that the program owner understands and accepts the requirements of 8.3(C) and shall comply.
E. Any changes or additions of valves or changes to the valve numbering, as examples, shall be continuously updated and kept current in the PRP Stop Valve Control Program documents. These changes shall be brought to the attention of the TSASK Auditor during audits. These types of changes **shall not require** the resubmission of the manual for TSASK review.
F. Onsite information for the program shall be current and accurate at all times and available whenever TSASK Field Inspectors or Auditors are on site.
G. Audits shall be scheduled with TSASK to ensure that the program remains current at all times.

9. Additional Information & Questions

9.1. Design of Pressure Piping Systems Inquiries

If possible, applicants should contact their Design Reviewer directly with questions. Be sure to include the TSASK reference number or provide enough detail that the Design Reviewer will know which application is being referenced.

For all other design inquiries, please contact TSASK Codes & Standards Compliance:

- By email at CodesandStandards@tsask.ca;
- By phone at (866) 530-8599. Please ask to speak to either a TSASK Design Reviewer or the Manager, Codes & Standards Compliance; or
- Visit the TSASK website at www.tsask.ca for more information.

9.2. QMS/QCP and Inspection Inquiries

For additional information or if there are any further questions or concerns, please contact TSASK:

- By email at info@tsask.ca;
- By phone at (866) 530-8599. Please ask to speak to a TSASK inspector or the Manager, Boiler and Pressure Vessel Safety; or
- Visit the TSASK website at www.tsask.ca for more information.

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APPENDIX I: Example of a PRP Stop Valve List

Company Name	
Site Name & Location	
Person(s) or position who authorizes the operation of PRP Stop Valves (Approvals Required)	

Stop Valve #	PRD #	Protected Equipment #	Applied Code Case	Mechanical Locking Method	Normal Valve Position	Location of Stop Valve	Design Philosophy (Reason for Stop Valve)	Operating Procedure to be followed when isolating PRD	Conditions under which PRD may be isolated
SV-XXX	*PSV-XXX*	*306E-101*	*M-5.6*	*Padlock*	*Open*	*Inlet of PSV-XXX Stripper Unit*	*Maintenance on the valve*	*OP-XXX.X Rev 2*	• *When down for turnaround* • *When valve is leaking*
SV-XXX	*PSV-XXX*	*306E-601*	*M-5.7(b)(1)*	*Lead Seal*	*Close*	*Between exchangers 306E-601 and 306E-602*	*Isolation of the heat exchangers for maintenance*	*OP-XXX.X Rev 6*	• *Maintenance* • *Isolation of an exchanger from process flow*

Please note that these are just examples of possible reasoning.