

Alternative Safety Approaches

Background and setting the scene for today's session

Introductions

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Objectives

- Provide an overview of recent changes to the Safety Standards Act
- Describe the next steps in the development of subsidiary regulations
- Outline the Authority's *initial* views concerning the process of developing and submitting a Safety Management Plan
- Solicit your views, comments, suggestions and recommendations on making the proposed changes work for you

Changes in the Act to provide for alternative safety approaches (ASA)

- Voluntary and optional process,
- Written or formal document,
 - Sets out objectives and approaches to safety, consistent with the Safety Standards Act
 - The objectives and approach can substitute for compliance with prescriptive requirements in subsidiary regulations
- Formally reviewed & accepted by a Safety Manager,
- Provides the Minister the authority to make further regulations.

Making further Regulations

The changes grant the Minister the authority to make further regulations regarding :

- regulated work or products the subject of an ASA,
- submission, amendment or renewal of ASA's,
- establishing criteria for hazard tiers, acceptance, suspension or cancellation of an ASA,
- requiring persons not associated with the proponent to perform duties regarding submission, amendment or renewal,
- the procedures to be followed when;
 - imposing terms and conditions,
 - amending an ASA, or
 - suspending or canceling an ASA
 - once accepted, the continuing monitoring and inspection for compliance with the ASA.

Timeline - Further Regulatory Development



Agenda

- Background and responsibilities under an Alternative Safety Approach,
- Provide an overview of the processes an operator/owner would undertake to develop a Safety Management Plan (SMP),
- The general framework or content a Safety Management Plan might take,
- Provide an overview of the Authority's review and registration of an SMP,
- Following acceptance outline the role of the SMP in the continuing owner/operator - Authority relationship.

Before Continuing

Some parameters for the ASA process have been established in the changes to the Act.

However, the bulk of the detail concerning the processes that would need to be undertaken, the form and format of an SMP, decisions on their acceptance, etc. are still to be 'hammered-out' in the regulations.

What follows is good practice in this area as adopted by other jurisdictions and is provided for your consideration and feedback into the writing of the regulations.

Background and responsibilities under an ASA

Why change?

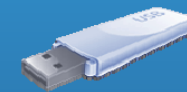
Basically in response to requests from industry stakeholders who own or operate equipment covered by the Safety Standards Act and its various subsidiary regulations.

Drivers to the changes

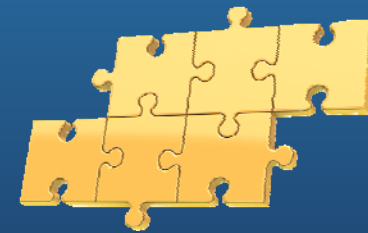
- Pace of changes in:
 - Technology & Safety Management practices
- Regulatory tools
 - balance Safety Management Systems against compliance
- Demands to eliminate barriers
- The need for integrated approaches to safety



1973



1999



Responsibilities under an ASA

A proponent who submits an ASA which is approved is responsible for assuring all work undertaken and all equipment or products used under the ASA complies with the various requirements contained within the ASA as well as any associated terms and conditions a Safety Manager may attach.

Authority oversight under an ASA

The Authority may inspect any matter in an ASA to:

- Assess compliance with any of the requirements contained in the ASA or any attached terms and conditions,
- Determine the extent to which the ASA is consistent with the objectives of the Act and subsidiary regulations.

Final Points or Thoughts Before Continuing?

Alternative Safety Approaches

An overview of the draft Alternative Safety Approach Process

Forms of ASA's Equivalent Standard Agreements

- The option to enter an ESA provided for in the 2003 SSA
- Optional & voluntary
- Provides the opportunity to take an alternative approach to compliance to specific regulatory requirements
 - Must demonstrate the objectives of the Safety Standards Act are met
- ESA subject to acceptance by a Safety Manager

Discussion

Are you aware of a company or facility that has applied for an ESA?

Have they discussed the benefits they found from entering into an ESA with you? Have they indicated any disadvantages or issues with taking that approach?

Forms of ASA's Safety Management Plans

- The primary focus of the 2010 revisions to the Act
- Similar in certain characteristics to ESA's
 - Optional and voluntary
 - Owner must propose an SMP
 - Safety Manager accepts or not accepts
 - SMP must demonstrate the alternative approach is consistent with the objectives of the Act

Provides the opportunity for exemption from various prescriptive requirements

ESA vs. SMP – The primary difference

Equivalent Standards Agreement



*Addresses a limited
number or specific
regulatory issues*

Safety Management Plan



*More systematic,
integrated or holistic*

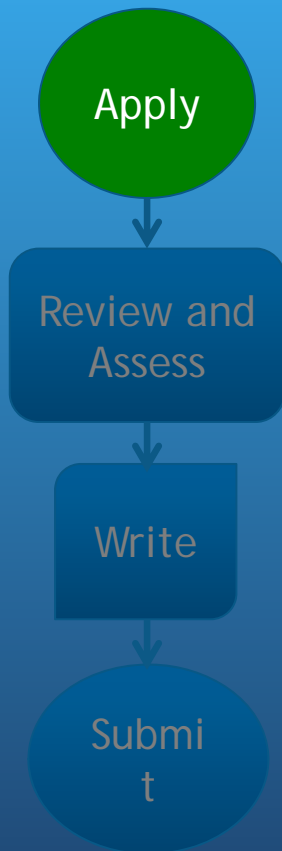
ESA vs. SMP Discussion

We'll be going into further detail on the SMP process and its differences with an ESA later.

However, with that quick snapshot any initial thoughts, comments, suggestions?

Safety Management Plans

Two Step Process



- First Step - Applying for an SMP
 - Review equipment, facilities, process or operations
 - Decide on the hazards present and potential consequences
 - Group those hazards into a 'hazard level'
 - Complete an SMP application and submit to BCSA
 - Safety Manager reviews and accepts the hazard designation and establishes a timeline for submission of the SMP that will be proportionate to the hazard
 - Note - a Safety Manager may decide the hazards do not warrant the filing of an SMP and not accept the request.

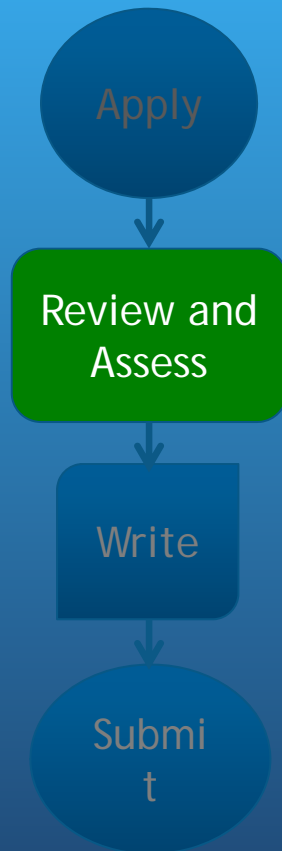
Discussion

If you were to apply - what type of help or assistance do you feel should be provided?

How detailed should the criteria be for determining the hazard tier of a facility?

What type of information would you like to see the Authority provide regarding the decisions a Safety Manager will make for approving or rejecting an application?

SMP's - Second Step -1



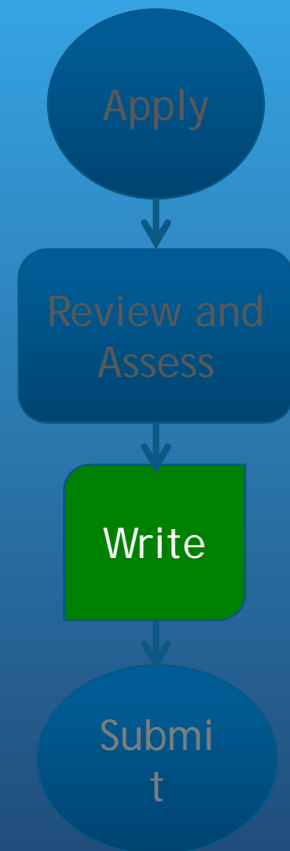
- Review the design of the equipment, facility, process or operations - assure the design is 'Fit-for-Purpose'
- Review the hazards, consequences and risks of an accident
- Review the controls in place
 - The hardware controls
 - The administrative or 'soft' controls
 - Review the training and competency of staff
 - Assure the controls are effective, reduce risks and are consistent with the Act's objectives
- Develop or review the management systems to assure the on-going effectiveness of these controls.

Discussion

What type of guidance do you feel is needed to complete these types of studies in your company, facility or operation?

SMP's - Second Step - 2

- Write the SMP;
 - Describe the facility, equipment or operations and how it was decided the design is 'fit-for-purpose'
 - Describe the studies undertaken of the hazards, risks and consequences and the findings of those studies
 - Demonstrate the hazard/risk studies were proportionate to the potential risks and consequences of an accident
 - Develop a list or register of the hazards and risks
 - Demonstrate the controls in place are effective, reduce the risks and are consistent with the Act
 - Describe the management systems in place to assure the on-going safe operation and maintenance of the facility



Discussion

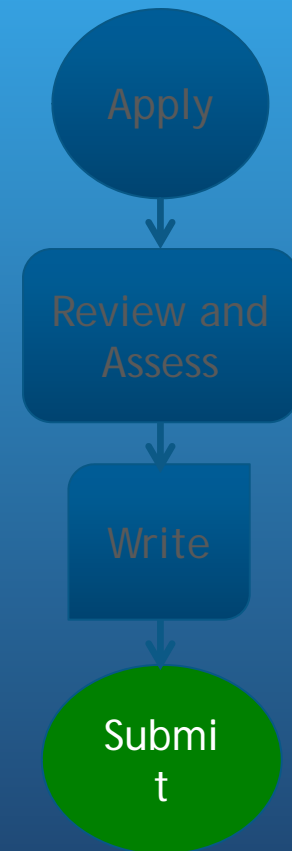
If you were to sit down right now and start writing an SMP for your facility, where would you turn to for advice or guidance?

What would you like provided to assist you with such a task?

Should that come from the BCSA, industry or professional associations or from some other source?

SMP's – Second Step - 3

- Submit the SMP to the appropriate Provincial Safety Manager,
- Safety Manager will lead a process of review to decide whether the SMP will be accepted
 - Complex facilities or those where the potential consequences could be catastrophic may require a team review,
 - Simple equipment or processes or where the consequences are less severe may be reviewed by a single assessor.
- Where incomplete the Safety Manager may require further information from the owner/operator



Acceptance of the SMP

- On completion of the review the Safety Manager may:
 - Accept the SMP as submitted,
 - Accept the SMP and attach various terms and conditions,
 - Return the SMP, require it to be revised and resubmitted and possibly impose interim or temporary terms and conditions, or
 - Not accept the SMP.

Discussion

Acceptance is a key point in this process.

What would you like to see in place to feel assured that the review and acceptance process is objective?

The SMP – the owner/operator & the Authority

Once accepted:

- The proponent will be responsible for implementing all the provisions contained within the SMP,
- The SMP becomes the primary regulatory tool the Authority will use in future meetings, inspections or audits,
- Where an inspection or audit identifies the SMP is not being followed;
 - The Authority will formally notify the proponent of any such variation,
 - If corrective actions are not taken the Authority may use its enforcement powers, or
 - Where serious a Safety Manager may decide to suspend or cancel the SMP.

Basically the same powers as complying with current regulations have been extended to SMP's

Discussion

Do you have any concerns regarding the power of a safety manager to suspend or cancel an SMP?

What kind of protections do you think should be in place to ensure that the power is not exercised arbitrarily?

Before taking a quick break and starting the last session

Any second or final thoughts on the process aspects of
developing an SMP?

Alternative Safety Approaches

So - What information will be required to be accepted?

Case Example

A Propane
Bulk Loading Facility
located in
British Columbia



The SMP Application

What should an application for an SMP contain?

Mostly Factual Info about the 'site'

- Factual information:
 - concerning the owner/operator,
 - the physical location of the site or facility;
- A short description of the equipment and operation,
- A short description of the environment surrounding the facility,
 - E.g. undeveloped land, land for agricultural purposes, within a town or city boundary, etc.
- A short overview of the regulations the SMP is intended to address,
- The hazard level of the facility or operation,
- A proposed timeline for completing the development and submission of the SMP.

A Template that could be downloaded from
the Authority's website

Example Facility

LPG/Propane Bulk Storage & Transfer Facility

- Bulk Storage of LPG/Propane
- Railcar unloading
- Tank truck unloading/loading
- Cylinder loading/unloading



Discussion

Thinking about your own facility, what of the information just discussed would you find difficult to provide?

The concept a of hazard tier may be new to many.

- Thinking about your facility, would you rank it as a high, medium or low hazard site?
- To assist with ranking, how detailed should the criteria be for determining the hazard tier of a facility?

Do you think we are asking for too much information in this first stage of the process?

- What would you remove?
- If not, what would help you the most in filling any gaps in the information you currently have or could readily develop?

The Safety Management Plan

What information would an SMP need to provide to meet the objectives of the Safety Standards Act?

Six major elements or sections

- General & administrative information
- Description of the facility & operations
- Hazard & risk identification and classification
- Risk & asset integrity management
- Emergency measures
- Provisions for continual improvement

General & Administrative Information

- Various administrative details:
 - location of the facility,
 - legal name(s) of the owner(s)/operator(s),
 - contact details,
 - organization chart showing various responsibilities.
- The regulatory provisions or requirements the SMP is intended to address,
- A short explanation of why the proposed safety management plan will provide an acceptable level of safety,
- The names and signatures of individuals responsible for implementing the provisions and requirements contained in the SMP.

Discussion

Any questions or need for clarifications on the type of general and administrative information that would be required?

Description of the Facility & Operations

- Description of the equipment, facility and operation and its overall intended purpose or function (e.g. generate and supply power, manufacture a product, etc.)
- Description of any generally recognized engineering and industry standards, codes or recommended practices the equipment was designed to or manufactured under.
- Description of the neighbouring surroundings:
 - Especially any facilities viewed as particularly vulnerable or sensitive to an accident (e.g. a watercourse, a protected species of animals or vegetation, a school, hospital or emergency service facility, etc.)
- Attestation of some form the equipment is fit-for-its-intended service and that the operating parameters are within the design limitations of the equipment.

The Example Facility

- Alongside a major arterial road
- On one side a golf course
- Warehouses and light industrial
- A river borders one side of the property
- Sports ground near to the facility



Discussion

Most of the information in this section is of a descriptive nature.

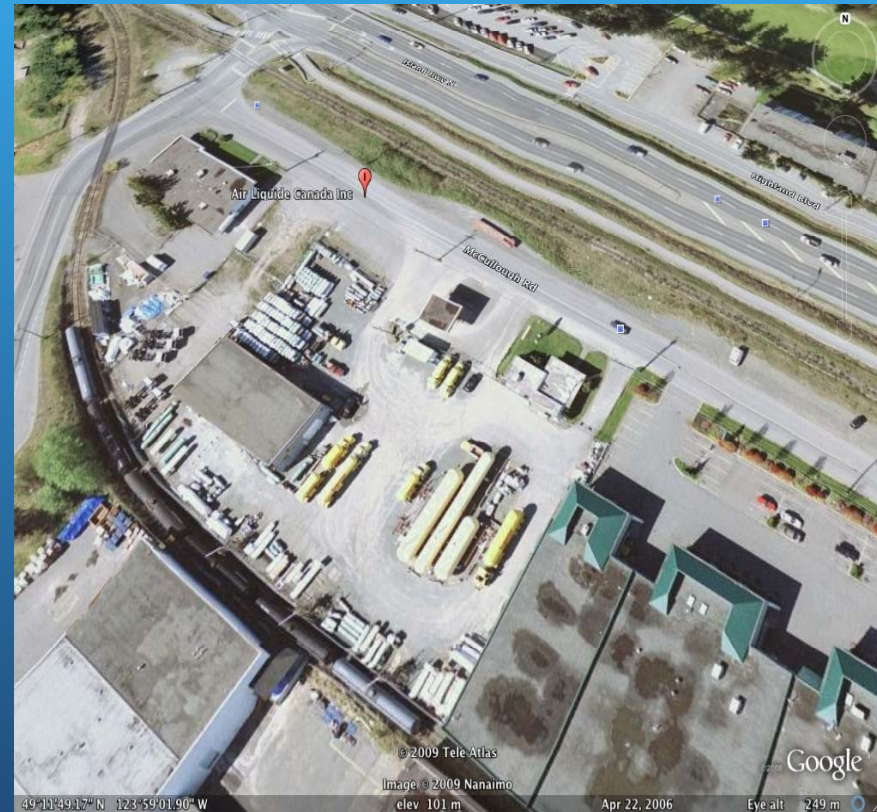
What about the requirement that the equipment is - fit for its intended service or purpose?

Hazard & Risk Identification & Classification

- All reasonably foreseeable hazards are identified and listed,
- A summary description of the techniques and methods used to:
 - Identify the various hazards the equipment and the operation of the equipment could present,
 - Evaluate the severity of the potential consequences of an incident or accident arising from the operation of the equipment,
 - Assess the likelihood or probability of a potential accident occurring,
 - The methods used were proportionate to the hazards and risks,
- The individuals involved and that members of the staff and workforce participated in these studies,
- A register of the hazards/risks

Example Facility

- Worst Case - major release from a bullet
- Credible Events:
 - Failure in a rail car loading arm,
 - Failure of tank-truck loading hose,
 - Failure of a cylinder loading hose.



Discussion

The requirements in this section could be new to many possible owners/operators.

Do you feel you could presently undertake these studies on your own?

If you needed assistance where would you turn?

What guidance would you like to see in the regulations or from the Authority vis-à-vis Authority guidance documents concerning this section?

Risk and Asset Integrity Management

- The standards applied to the regulated products or regulated work,
- The programs for maintaining and assuring the on-going integrity of regulated equipment, products or activities,
- The programs for assuring and maintaining the competency and qualifications of staff (management, operators, maintenance),
- The means to assure equipment or products will be operated safely and in a manner that will not exceed its design limitations,
- A demonstration the risk control measures (both hardware and administrative) are effective, control the risks and are consistent with the Act's objectives.
- How changes to the equipment, operations, staffing, etc. will be managed to assure the risks of an incident are continually and effectively managed.

Example Facility Risk Controls



- Bullets internally and externally inspected
- Railcar and loading hoses inspected
- Loading arms & hoses fitted with quick closure valves
- All unloading and loading done by certified staff

Discussion

As we discussed earlier, do you feel you could currently develop or provide the information as outlined for this section?

If not where would you turn for assistance, and what additional assistance do you feel should be provided?

In other jurisdictions perhaps the most debated issue is demonstrating the effectiveness of controls in reducing the risks of an incident or accident.

- Is this a concept you have heard before?
- How would you go about demonstrating this point?
- Where would you seek guidance or what guidance might you like to assist you with this issue?

Preparations in Case of an Emergency

- A description of the plans and measures in place to mitigate the consequences of a potential incident,
- A description of the plans to respond to an emergency especially where the emergency requires the intervention of the local emergency services,
- Details on the documentation and reporting of incidents including the individuals responsible for ensuring that reporting occurs as specified in the plan

Example Facility - Emergency Provisions

- Police to:
 - block traffic,
 - order shelter-in-place, or
 - evacuate nearby occupied facilities, if necessary
- Fire services to address both an un-ignited and ignited leak,
- Rail operator to reposition rail-cars



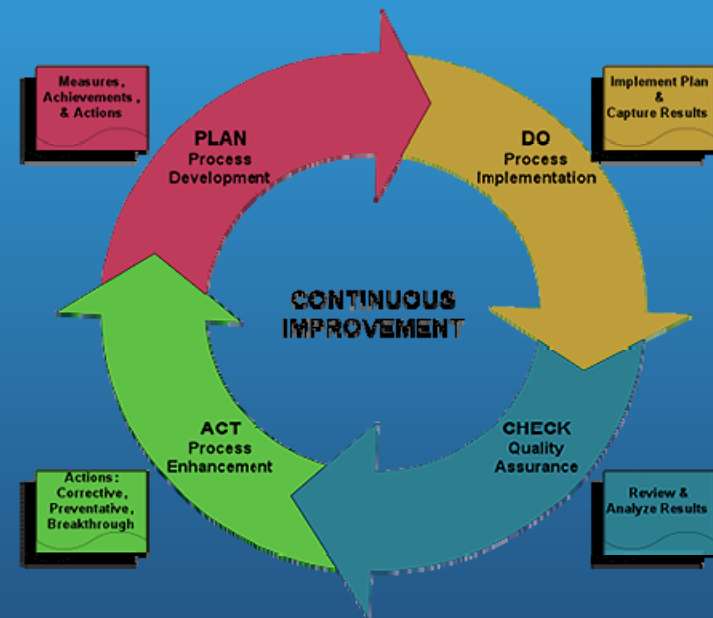
Discussion

Of particular interest is where a minor incident could escalate to a major, severe or even catastrophic nature.

Do you currently have plans in place to address this possibility and where they require the assistance of outside emergency services how do you interrelate with them?

Means for Continual Improvement

- Provisions to periodically monitor or audit
 - the equipment,
 - the operations,
 - the systems, and
 - the staff,to assure continuing safety of the facility and continually improve them.
- Details concerning the periodic review and updating of the Safety Management Plan



Discussion

To quote the words of Jim Alder, Snr. VP of Celanese's worldwide operations:

"In safety you are either continually improving or going backwards. There is no such thing as remaining static."

What programs do you currently have in place to actively monitor and audit your safety programs to assure they are being adhered to and more importantly be improved?

What do you feel you would need to implement to meet this requirement?

Concluding Remarks

Much of this may have been new to you. Even if not it was a lot information.

There's also the 'ole' later today or tomorrow morning
- "Gee I wish I had said that..." as well.

In those cases please send your further comments to:

Meryl.Claudio@safetyauthority.ca