

# Process Safety Management (PSM) Services and Codes Information

## Regulations that make Industrial Ammonia Refrigeration PSM necessary

### July 1990

OSHA published in the Federal Register (55 FR 29150) the *"Process Safety Management of Highly Hazardous Chemicals"* outlining requirements for the management of processes utilizing highly hazardous chemicals to assure safe workplaces. These OSHA regulations were phased in completely in 1997 and are generally referred to as **"PSM" (Process Safety Management)**.

### November 1990

United States Congress passed the *"Clean Air Act Amendments" (CAAA)* which require OSHA, in coordination with the EPA, to issue a chemical process safety standard to prevent accidental releases of chemicals that could pose a threat to employees. CAAA lists these chemicals and specifies the minimum elements OSHA must require of employers and outlines the criteria enforced by the EPA. These EPA regulations were phased in completely in 1999 and are generally referred to as **"RMP" (Risk Management Program)**.

### PSM + RMP = Protect People/Environment

These two foundations form the PSM program outline, a network of interlocking safety requirements.

### Stellar will manage ALL 14 Elements of PSM (as established by OSHA)

- ✓ Employee Participation
- ✓ Mechanical Integrity
- ✓ Hot Work Program
- ✓ Contractor Safety
- ✓ Compliance Audits
- ✓ Standard Operating Procedures (SOP)
- ✓ Process Safety Information (PSI)
- ✓ Pre-Startup Safety Review (PSSR)
- ✓ Hazmat, On-Site, and Remote Training
- ✓ Emergency Planning and Response
- ✓ Process Hazard Analysis (PHA)
- ✓ Management of Change (MOC)
- ✓ Incident Investigation
- ✓ Trade Secrets

## Stellar is your long-term partner for PSM solutions



### Compliance Audit

A great first step to bringing your facility into compliance. Our Compliance Audit reviews each of the 14 PSM Elements to ensure full regulatory compliance and confirms that procedures/instructions are being followed. A compliance audit is required every three years and is mandated by OSHA's PSM §1910.119(o) and EPA's RMP §68.79. This is an invaluable tool to

evaluate the current "health status" of your PSM/RMP program, allowing Stellar to be a third-party that puts fresh eyes on the system. Our PSM consultants bring years of rich experience to your plant, revealing problem areas, errors, omissions, and opportunities, helping you take corrective action prior to getting hit with OSHA citations or suffering a costly accident.



### MI/NDT Inspection

Two system inspections Stellar offers (often performed together) are the Mechanical Integrity (MI) inspection and the Non-Destructive Testing inspection (NDT). MI inspections will assess the integrity and functionality of all refrigeration equipment at your facility, while an NDT selects numerous piping/vessel test points throughout the system to survey for corrosion or

damage. Per ANSI/IIAR 6-2019, an **equipment inspection must be conducted every at least every five (5) years** by a qualified inspector. The customer will be provided a detailed report documenting any findings and recommended repairs/actions. These inspections are the best way to get out ahead of overlooked issues at your facility and mitigate potential risk.

Richard Boyd - Director of PSM Compliance

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## Management of Change

Management of Change (MOC) is the process of looking for potential hazards and safeguarding employees prior to the proposed alterations to your refrigeration system. Required by OSHA's PSM 29 CFR §1910.119(l) and the EPA's RMP 40 CFR §68.75, MOCs emphasize that it is the duty of management to take responsibility for all changes to process chemicals, technology, equipment and procedures. Nearly all such changes

also require a PSSR (Pre-Startup Safety Review) before ammonia is reintroduced. Stellar's PSM experts will walk owners through the entire MOC process, ensuring their system maintains 100% compliance and all documentation is in order. MOC prices vary depending on the complexity of the proposed change.



## Process Hazard Analysis

Did you ever think: "What can possibly go wrong today?" The Process Hazard Analysis (PHA) is the answer to this timeless question. PHA's are structured so that Stellar works with your team to identify and analyze potential hazards at your facility. Mandated by OSHA's 29 CFR §1910.119(e) and EPA's 40 CFR §68.67, PHA's are directed at both the cause and level of consequence of unforeseen releases/accidents.

**The PHA on file must be reevaluated every five (5) years. A new PHA must be performed every time the existing system is modified as a "major change" under the facility's MOC.** The itemized report provided to the owner allows them to schedule priority actions to eliminate workplace threats.



## Lockout/Tagout

Hazardous energy is constantly searching for the path of least resistance and must be controlled at all times. Stellar's Lockout/Tagout (LOTO) procedures will ensure employees and contractors are protected around the clock from all forms of potentially lethal energy during isolation or servicing of machines/equipment. Our team offers various options

for LOTO deliverables, ranging from our own detailed program to other familiar formats such as Brady®. OSHA PSM 29 CFR §1910.147 sets forth industry requirements to properly disable, lockout, and tag equipment to guard your personnel against unexpected reenergization. LOTO programs prevent an estimated 120 fatalities and 50,000 injuries each year in the U.S.



## SOP's/MIP's

All systems and the equipment comprising them have operating phases and Standard Operating Procedures (SOP's) which serve as a guide to safely and effectively navigate those phases each workday. Required by both OSHA PSM 29 CFR §1910.119(f) and EPA RMP 40 CFR §68.69, thorough and complete SOP's are indispensable to every well-run process. However, SOP's are of little use if equipment refuses to function,

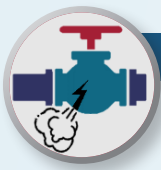
hence the necessity of detailed Mechanical Integrity Procedures (MIP's). Stellar's MIP's keep your system running by outlining all maintenance, inspections and testing that each specific component needs to stay fully operational. OSHA 29 CFR §1910.119(j) and EPA 40 CFR §68.73 mandate that an MIP program be in place.



## On-Site/Remote Training

All employees involved with highly hazardous chemicals must fully understand the safety and health risks associated with the processes they work with. This is not only to protect themselves, but also their fellow employees and the citizens of the surrounding communities. Stellar will train your employees on the process chemicals and operating procedures as required by OSHA 29 CFR §1910.119(g) and EPA RMP 40 CFR §68.71, but this doesn't stop at Initial Training... **Refresher Training**

**should be conducted at least every three (3) years in addition to every time the process is changed.** Furthermore, the employer must document this training and the means used to assure that employees/contractors understood the training received. Stellar offers Onsite and Remote Initial Training, PSM/GDC Training, Refrigeration Operator Training, Haz-Mat, SOP/MIP Training, LO/TO Training, Single Point Lesson Training, Specialized Training.



## Incident Investigation

In the aftermath of an incident which resulted in (or could have resulted in) a catastrophic release of a regulated substance, an Incident Investigation into where it began is directed by OSHA's 29 CFR 1910.119(m) and EPA 40 CFR §68.81. According to the EPA, a catastrophic release is one that "presents an imminent substantial endangerment to public health and the environment." OSHA defines it as "a major uncontrolled

emission, fire, or explosion involving one or more highly hazardous chemicals that present serious danger to employees in the workplace." Stellar's team of experts will help you through such an incident by performing IAR-based investigation processes and providing all the required forms.

**Ready to get a quote on a Stellar PSM Program? Call us *anytime!***

**Stellar is a fully integrated Design-Build & Service firm globally experienced and licensed in 48 states.** As the undisputed leaders in Ammonia Refrigeration, our integrated PSM team possesses an unrivaled depth of knowledge stemming from decades of experience. In as little as four (4) to eight (8) weeks, our experts will develop a full PSM program tailored to your facility and specific needs. We will evaluate your factory portfolio, begin a PSM Audit or Gap Analysis, initiate the PSM program layout, hold progress meetings with you and your team, and submit all final PSM documentation for owner approval.

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