



TWO DAY S TRAINING PROGRAM ON
Pressure and Safety Valve (PSV)

(Fundamentals, Design, Sizing and Parameter)

24-25 Nov 2017 @ Nagpur and 15-16 December 2017@Kolkata

Objective of the program:

PSV design is one of the most important and critical aspects of the Process safety design. With a lot of emphasis being laid by the clients on Process safety now-a-days and mandatory requirements from government bodies, any Process design must fully incorporate an impeccable Process safety design. No Process design can afford any compromise with Process safety.

Hence, adequate knowledge and skill about various aspects of PSV design is imperative for the Process engineers. It is with this objective that this training program aimed at imparting thorough understanding of various aspects of Process design is initiated.

Learning Outcome:

The attendees of the training program would be able to acquire following learning' s from the training Program:

- i) Fundamentals of the PSVs
- ii) Importance of the PSV in Process safety design
- iii) How to determine PSV design parameters
- iv) How to identify every applicable upset scenario without missing anyone
- v) How to calculate relieving rate of each scenario
- vi) What are various applicable international codes/standards and how are they applied?
- vii) How to prepare a PSV datasheet accurately and completely

With above learnings, the training is intended to provide following benefits to various stakeholders related to PSV activities:

For Process Design Engineers: Better knowledge and understanding of PSV design, reduced mistakes, minimization of repeat work, better efficiency and productivity, reduced man-hour cost.

For Process Plant Engineers: Better knowledge and expertise of PSV design leading to trouble shooting, identification of root cause of the problems and finding the solutions, effective review of project documents delivered by the engineering consultants/contractors



For Process Managers: In-depth knowledge and expertise of PSV design leading to better team guidance, mentoring and supervision resulting into increased team performance and productivity

For Vendors: Better understanding of Process specifications and design data leading to error-free vendor specification, documents and drawings, reduced approval cycles, timely and flawless delivery

Specific Features of the Program:

- i) The program focuses on learning through illustrations and consists of 2 case studies and more than 10 examples.
- ii) It explains Layer of Protection Analysis (LOPA) with the help of case study to bring about the conceptual clarity about the need for the PSV in Process design.
- iii) The program explains how to identify various applicable upset scenarios for a system with the help of case study.
- iv) The program will tell how dynamic analysis and multistage flashes can provide accurate method for calculating PSV relief load for fire case in case of multi-component mixtures.
- v) The PSV relief load calculation for each upset scenario is accompanied by an example for better clarity and understanding.
- vi) The program explains Omega method for PSV sizing for two phase flow with the example.

Who should attend?

Process design engineers, Process plant engineers, Process managers in plants and design organizations, Instrument engineers, PSV vendors.

Prerequisites:

Anyone who is a graduate Process or Instrumentation engineer working in a design engineering organization, plant or Vendor Company preferably with minimum 1-2 year's work experience can attend this training program.

Course Curriculum (Course Contents): Session-wise Details

Session/ Day	Expected Duration (Hr)	Contents
1/1	3	<ul style="list-style-type: none">• Concept and Fundamentals• Functions of the PSV• Working of the PSV• Need for the PSV in Process Design with Case Study• Layer of protection analysis (LOPA)• Definitions of terms



2/1	3	<ul style="list-style-type: none">• PSV Design Parameters• MAWP, set pressure, overpressure, relieving pressure• Single and multiple PSVs• Applicability of API and ASME codes for PSV design• Back Pressure• Type of PSVs and optimum selection of the PSV type• PSV sparing philosophy
3/1, 1/2	4	<ul style="list-style-type: none">• PSV Upset Scenarios• Identification of various upset scenarios with case study• Comprehensive approach for scenario inclusion• Relieving rate calculation for various upset scenarios with examples-fire, blocked outlet, control valve failure, thermal expansion, power failure, instrument air failure, air cooler fan failure, cooling water failure, reflux failure, exchanger tube rupture
2/2	4	<ul style="list-style-type: none">• PSV Sizing• PSV orifice size calculation for liquid, gas and two-phase flow with examples• Determining governing scenario for PSV calculation with example• Selection of orifice designation with example• Calculation of PSV inlet and outlet pipe sizing with example
3/2	2	<ul style="list-style-type: none">• PSV Datasheet• PSV datasheet preparation• Critical aspects of PSV datasheet preparation• PSV checklist

Certification:

Every successful participant will be awarded a course completion certificate.

Delivery Methodology (Strategy):

- Introduction and Objective Setting
- Knowledge Presentations,
- Assignments & Exercise,
- Feedback and Assessment
- Discussion and Interaction
- Delivery 9:30 AM to 17:30 PM



Centre For Industrial Solution and Advanced Training

AN ISO 9001:2015 CERTIFIED

(Technical- Electrical/Mechanical/Automation/Chemical, Behavioral& Soft Skill, Safety, Business Excellence, Safety &Energy Audit)

"A complete Training Solution Under One roof"

About CISAT:

Centre For Industrial Solution and Advanced Training is an ISO 9001:2015 certified Training Provider Company managed by professionals with rich Industry and teaching experience. Company involves in professional trainings and been providing training on various topics of Industry interest through various experts associated. More details are available on www.cisat.co.in.

Training Facility:

CISAT has International level Training Centre Located in a learning atmosphere at Butibori around 24 KM from Nagpur towards Wardha (Maharashtra Region), India. 18 KM from Nagpur Airport. It is equipped with training facility for upto 40 participants fully air conditioned, LCD Projector, Audio-video, White Board and all facility required for natural activities. It also has facility for Lodging and Boarding in a campus.

About Nagpur:

Nagpur, situated in a central part of India is a historical city. It is the second greenest city of India and a winter capital of Maharashtra. Nagpur is famous for its oranges, hence called as Orange City. Lots of places are of interest and visit. It is rich with natural gift and surrounded by Forest, Rivers, Dams and hill station like Chikhaldara. It has three Tiger reserves Pench, Navegaon and Tadoba within a limit of 150 KMs.

Nagpur itself rich in terms of picnic spots like Futala Lake, Gandhisagar Lake, Maharajbagh Zoo, Various historical temples, Fort, botanical Garden, Raman Science Park, etc.

Registration Details:

Dates of the program: 24-25 Nov 2017 @ Nagpur and 15-16 December 2017@Kolkata

Participation fees: INR 16000/- Per participant (GST@18% extra) (Nonresidential)

Payment: ECS/NEFT/DD in favor of "Centre for Industrial Solution and Advanced Training" Payable at Nagpur, Maharashtra, India. Account No: 0509102000003353
Bank: IDBI, Wardha- 442001, MS, India; IFSC Code: IBKL0000509; Swift Code IBKLINBB007; MICR Code 000259000.



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Venue: KEC, International Training Centre, Butibori, Nagpur, Maharashtra, India. (18 KM from Nagpur Airport)

Kolkata Venue to be informed seven days before training program.

For Registration, please do contact to,

We prefer on line Registration through our web www.cisat.co.in.

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With Best Regards & Thanks,

Centre For Industrial Solution and Advanced Training

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