



HAZOP

Hazard and Operability study (HAZOP)

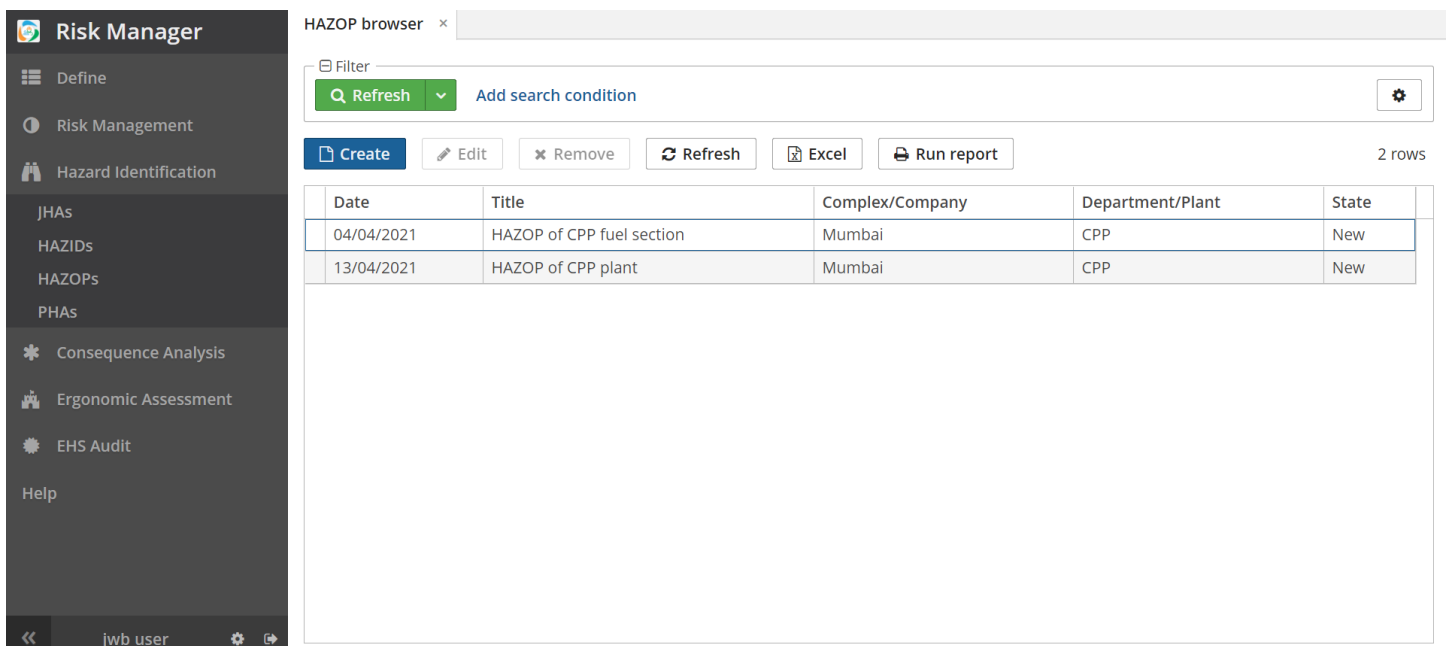
HAZOP

A hazard and operability study (HAZOP) is a structured and systematic examination of a complex planned or existing process or operation in order to identify and evaluate problems that may represent risks to personnel or equipment.

The technique is based on breaking the overall complex design of the process into a number of simpler sections called 'nodes' which are then individually reviewed. It is carried out by a suitably experienced multi-disciplinary team (HAZOP) during a series of meetings. The HAZOP technique is qualitative, and aims to stimulate the imagination of participants to identify potential hazards and operability problems.

SheelRisk module HAZOP can be used to record HAZOP analysis, their revision.

To open HAZOP module, click [Hazard Identification/HAZOP](#) in sidebar. This will open browse screen listing all HAZOPs recorded into system.



The screenshot shows the 'Risk Manager' application interface. On the left is a dark sidebar with navigation options: Define, Risk Management, Hazard Identification (selected), JHAs, HAZIDs, HAZOPs, PHAs, Consequence Analysis, Ergonomic Assessment, EHS Audit, and Help. The main area is titled 'HAZOP browser' and contains a filter box with a 'Refresh' button and an 'Add search condition' link. Below the filter is a toolbar with buttons for 'Create', 'Edit', 'Remove', 'Refresh', 'Excel', and 'Run report'. A table displays two records:

Date	Title	Complex/Company	Department/Plant	State
04/04/2021	HAZOP of CPP fuel section	Mumbai	CPP	New
13/04/2021	HAZOP of CPP plant	Mumbai	CPP	New

The table indicates there are 2 rows of data.

The screen has four items - Filter, Top toolbar and table of records. User can filter data using filter box. Toolbar has buttons for different data operations like create, edit and delete. Table of records list all recorded data and can be sorted by clicking on the heading of columns.

Toolbar

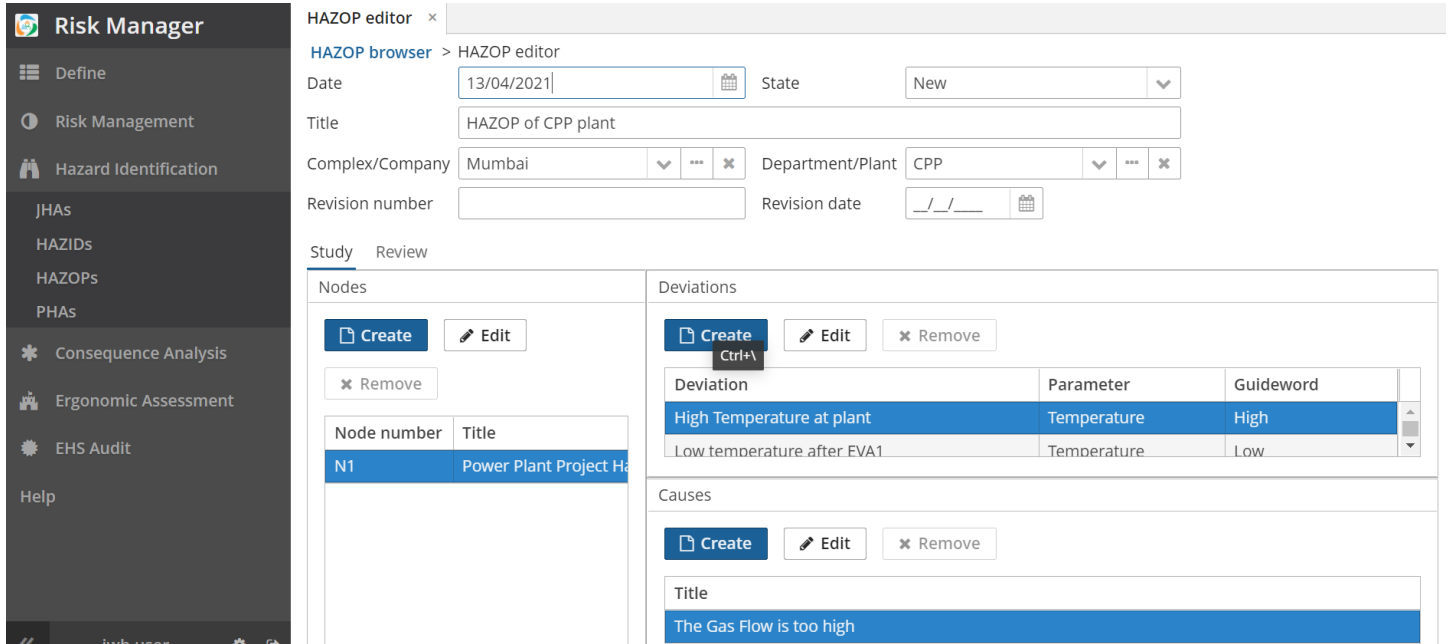
Toolbar contain following buttons-



Create	To record new HAZOP
Edit	To edit the selected HAZOP
Remove	To delete the selected HAZOP
Refresh	To refresh the data in table
Excel	To export the table data in Microsoft Excel Format
Run Report	To generate report

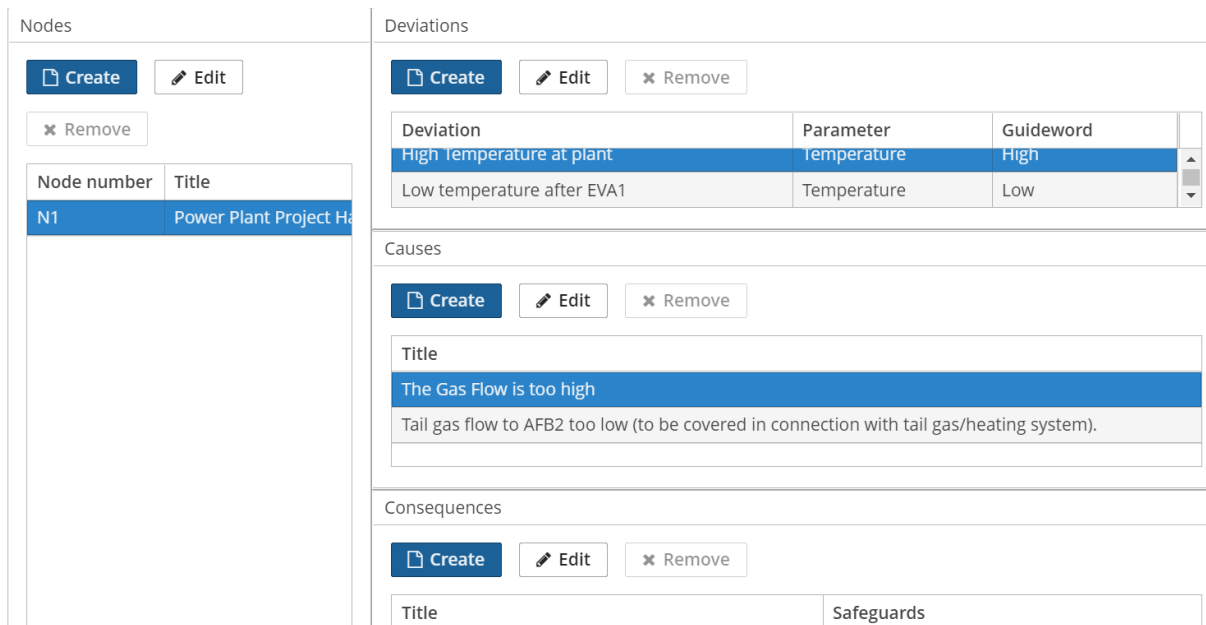
Adding New HAZOP

To add new HAZOP to database, click [Create](#) button in top toolbar, this will open Add/Edit screen.



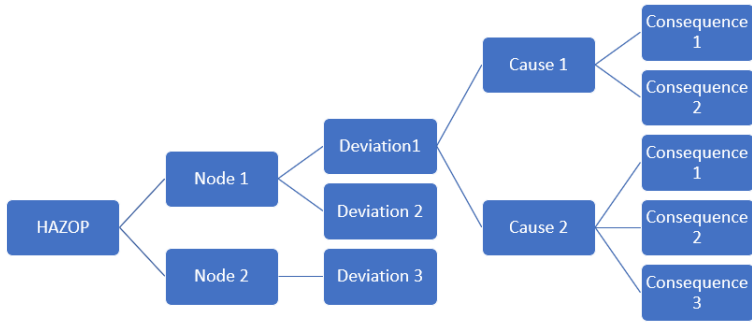
The screenshot shows the 'HAZOP editor' interface. On the left is a sidebar with navigation options like 'Define', 'Risk Management', 'Hazard Identification', and 'JHAs'. The main area contains a form for creating a new HAZOP study. Fields include 'Date' (13/04/2021), 'State' (New), 'Title' (HAZOP of CPP plant), 'Complex/Company' (Mumbai), and 'Department/Plant' (CPP). Below the form are tabs for 'Study' and 'Review'. The 'Study' tab is active, showing three sections: 'Nodes', 'Deviations', and 'Causes'. The 'Nodes' section has a table with one entry: N1, Power Plant Project H. The 'Deviations' section has a table with two entries: High Temperature at plant (Temperature, High) and Low temperature after EVA1 (Temperature, Low). The 'Causes' section has a table with one entry: The Gas Flow is too high.

User can add node details in the table given at bottom.



This image provides a detailed view of the 'Nodes' table. The table has two columns: 'Node number' and 'Title'. The first row contains 'N1' and 'Power Plant Project H'. Above the table are 'Create', 'Edit', and 'Remove' buttons. The 'Create' button is highlighted with a tooltip that says 'Ctrl+N'.

The HAZOP study hierarchy is divided in nodes, deviations, causes and consequences as depicted below-



Add Node

Click Create button on top of node table. Enter data of node in popup screen.

Hazop Node editor [Close]

Node number:

Title:

Design intention:

Drawing:

Add Deviation

Select node and click Create button on top of deviation toolbar. Enter deviation details in popup screen.

Hazop Deviation editor [Close]

Parameter: [Dropdown] [More] [Close]

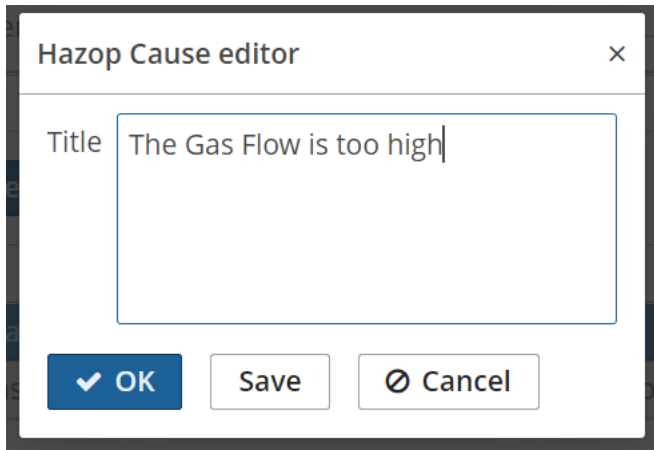
Guideword: [Dropdown] [More] [Close]

Deviation:

Select parameter and guideword from already populated database

Add Cause

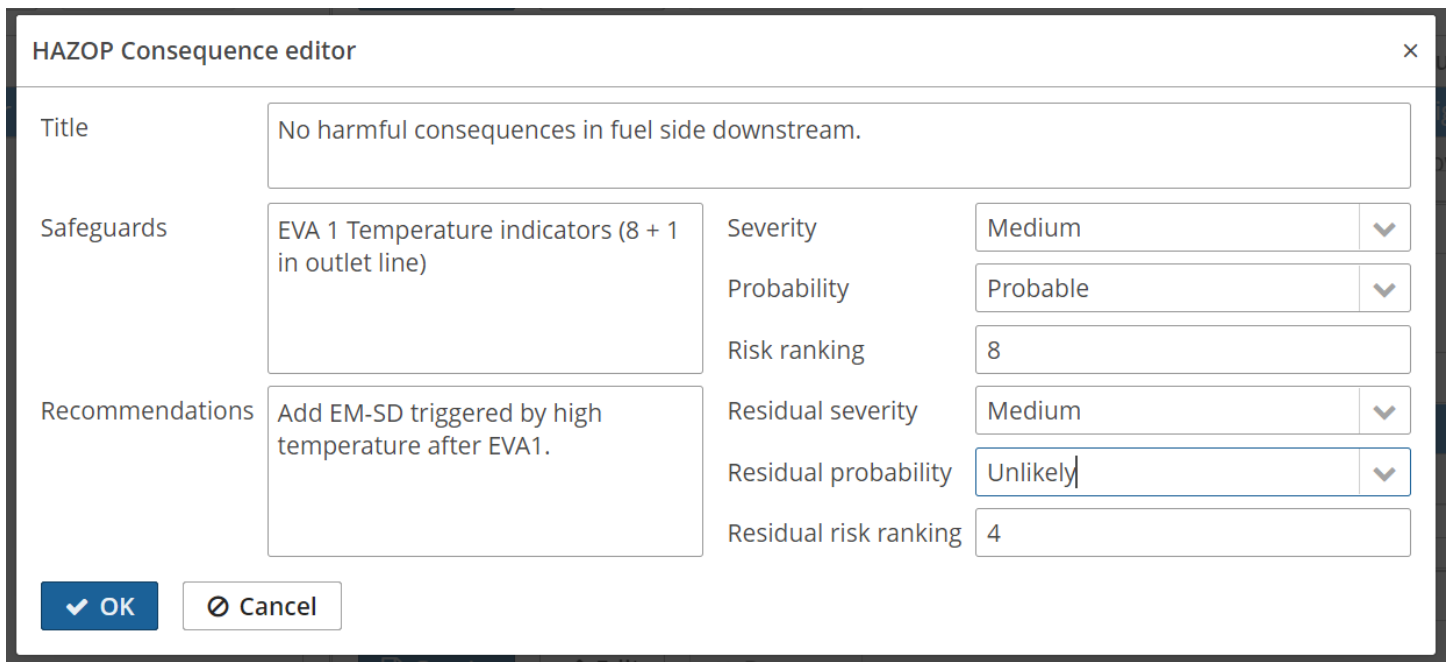
Select deviation and click Create button on top of cause toolbar. Enter cause details in popup screen.



The screenshot shows a 'Hazop Cause editor' window. It has a title bar with a close button. The main area contains a 'Title' label and a text input field with the text 'The Gas Flow is too high'. At the bottom, there are three buttons: 'OK' (with a checkmark), 'Save', and 'Cancel' (with a close icon).

Add Consequence

Select cause and click Create button on top of consequence toolbar. Enter consequence details in popup screen.



The screenshot shows a 'HAZOP Consequence editor' window. It has a title bar with a close button. The main area is divided into several sections: 'Title' with a text input field containing 'No harmful consequences in fuel side downstream.'; 'Safeguards' with a text input field containing 'EVA 1 Temperature indicators (8 + 1 in outlet line)'; 'Recommendations' with a text input field containing 'Add EM-SD triggered by high temperature after EVA1.'; 'Severity' with a dropdown menu set to 'Medium'; 'Probability' with a dropdown menu set to 'Probable'; 'Risk ranking' with a text input field containing '8'; 'Residual severity' with a dropdown menu set to 'Medium'; 'Residual probability' with a dropdown menu set to 'Unlikely'; and 'Residual risk ranking' with a text input field containing '4'. At the bottom, there are two buttons: 'OK' (with a checkmark) and 'Cancel' (with a close icon).

Selected severity and probability from lookups, risk ranking will be automatically calculated.

Reporting

The HAZOP database can be formatted for reporting by following-

- Data can be exported to MS Excel by clicking Excel Button in top toolbar.

- Data can be sorted/filtered.
- Detailed report of a particular HAZOP can be printed in MS word format by Run Report button in top tool bar.



Contact Us

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