



KISH P & I LOSS PREVENTION CIRCULAR KPI-LP-34-2012

(Scald Injury During Maintenance)

► Accident in Brief:

During routine maintenance, the fitter was engaged in changing the leaking gland packing of a valve on a steam return line. Before commencing the task, he isolated the line by shutting off the main distribution valves as well as the inlet valve for the steam heating coil from where the return line issued.

The main stop valve of the boiler remained open to maintain other auxiliary services. After loosening and separating the valve flange, the fitter did not notice any pressure in the line, and continued his work. All of a sudden and without any warning, a jet of steam and hot water spurting out of the open flange, scalding the fitter's face.

► Result of investigation:

1-It was established that despite being shut, the steam distribution and inlet valves were not holding. Consequently, steam slowly built up pressure on the condensed water in the heating coil, and when it was sufficient to overcome the internal resistance and head of the water, it spurting out of the open flange resulting in the accident.

2-No formal risk assessment was carried out before commencing the work on the steam line.

► Lessons learnt:

1-In order to avoid recurrence of such accidents, it is imperative that, apart from isolating the branch lines, the main stop valve on the boiler to be kept shut or the line blanked off upstream at a suitable point before opening any part of the steam lines;

2-Risk assessment must be carried out without fail before commencement of such jobs.

► Further Guidance has been quoted from Accident Prevention Code:

21.2.1. No person should perform any operation on a boiler, unfired pressure vessel or steam pipe that could result in the release of steam, air, or oil except:

(a) Under the supervision of an engineer officer; and



(b) With the knowledge and approval of the chief engineer.

21.2.2. All boilers and unfired pressure vessels and steam piping should be inspected internally and externally at regular intervals by a competent person as required by the national authority.

21.2.3. No boiler or unfired pressure vessel should be operated or kept at working pressure if unsafe for use or not provided with the properly maintained fittings necessary for safe operation.

21.2.4. (1) Before any boiler or unfired pressure vessel is opened for inspection, any pressure therein should be released, the contents cooled down to atmospheric temperature and the system effectively drained off.

(2) No boiler or unfired pressure vessel should be opened or entered for inspection until adequate arrangements have been made to prevent any backflow of steam or working fluid by blanking off, or locking shut, any lines or valves that might allow such backflow of steam, hot water or exhaust gases to enter the boilers, combustion chamber or pressure vessel.

