

SAFETY CODE FOR IRON & STEEL SECTOR		
MINISTRY OF STEEL, GOVT. OF INDIA	Permit to Work (Operation & Maintenance)	Doc. No: SC/04
		Rev no. : 00 Effective Date : --

1. OBJECTIVE

This safety code has been prepared to formulate a formal 'Permit to Work' to be issued by owner department or the custodian of the area/ equipment/ shop to the executing department, agency/ person who would be working there for activities enlisted at 3.2 below. It is all the more important to follow Permit to Work system in view of the activity(ies) performed being either hazardous in nature or being carried out in hazardous atmosphere.

2. SCOPE

The guidelines are applicable to all the areas/ shops in the steel industry.

3. PROCEDURE

3.1 DEFINITIONS

LOTO: Lock Out Tag Out system whereby the energy source is locked out for preventing inadvertent switching and tagged out for alerting people about work in progress.

3.2 THE JOBS WHERE PERMIT TO WORK IS REQUIRED

- i) The permit to work is to be obtained for carrying out work like repair, replacement, modification, maintenance (including whitewashing, cleaning & painting), inspection, etc, which are hazardous in nature or at hazardous locations or involving multiple agencies and which expose the men and material to risk due to any one or more of the following:
 - a) Work on electrically operated equipment.
 - b) Work on pipelines/equipments handling chemicals, acid, gases, steam, water, oil, etc, at normal/ below/ above atmospheric pressure and temperature.
 - c) Work on or in the vicinity of moving machines/equipments/gas prone areas/ high tension lines/ bare conductors.
 - d) Work in confined spaces.
 - e) Demolition and excavation.
 - f) Connection and interfacing between new and old units.
 - g) Work at height.
 - h) Any other equipment/ location/ area which may be associated with hazards.

- ii) Permit to work may or may not involve shutdown of the equipment. Electrical shutdowns, if needed, shall, however, be issued in accordance with Indian Electricity Rules. This will be obtained by the issuing authority of the owner department.

3.3 PROCEDURE FOR OBTAINING PERMIT TO WORK

- i) An authorized representative of the executing department shall obtain "Permit to Work" from the owner department in writing by applying on the format given at **APPENDIX**. The permit to work shall be issued by the issuing authority of the owner department or a competent person authorized by him.
- ii) The above Format shall be filled in and signed by all the concerned persons in triplicate, preferably carbon copies. The first copy shall be for the record of the person seeking the permit while the second copy shall be for record of the person issuing the permit and third copy of Electrical Isolation (whenever required). LOTO (Lock Out Tag Out) to be followed, wherever the facility permits.
- iii) An E- Permit to Work system may be suitably devised on an IT based / SAP platform based application which may be customized as per the 'Permit to Work' code. It will replace the manual system of work permit with enhanced safety and other features of an IT based system. In the new e-permit system, one can raise, process, approve and execute the permits online. Inherent benefits of going digital will introduce many interlocks in the present manual permit system. Also, it will enhance the review, analysis and tracking of the various aspects of work permit system like keys, people working, agencies involved, isolation done etc.
- iv) Order of sequence to be followed for issuance of Permit to Work.
 - a) Agency/ Person seeking Permit to Work shall approach the owner of the equipment (Operation) with duly filled form in Triplicate.
 - b) The Owner/ Operation Department will approach electrical for taking Power Isolation (Where ever required).
 - c) Owner (Operation) will inspect the equipment/ area and give final clearance/ issue permit to the seeker.
- v) Before issuing the Permit to Work, the following shall be ensured by the issuing authority
 - a) The equipment shall have to be stopped and put out of operation wherever necessary by the issuing authority/ owner department.
 - b) "Caution" tags and "Men at Work" tags shall have been placed at conspicuous and vulnerable locations by the issuing authority.
 - c) Red flags, barricades, stoppers, earthing bars (with clearance of electrical department), etc. shall have to be placed at vulnerable locations by the concerned authority.
 - d) For air, gas, steam, hydraulic fluids, acid, chemicals, water, etc, valves will be closed or a blank shall be provided wherever necessary by the owner department. Valves shall be put in locked position, wherever such provisions exist and the key shall have to be kept in safe custody of a person as decided by the competent person of the owner department.
 - e) Electrical fuses shall have to be removed and kept in the safe custody of issuing authority.

- f) Sample analysis of gas/air shall have to be done.
- g) All concerned personnel/ agencies who are likely to be affected by the work/ shutdown shall have to be communicated about the work, stoppage of equipment, etc, by the owner department.
- h) All persons in the vicinity shall have to be informed by the issuing department.
- i) The details about the likely hazards and precautions to be taken shall have been explained or given in writing by the owner department to the person seeking permission to work.
- j) Relevant job protocol to be prepared by the job coordinator with distinct no. and date.
- vi) After ensuring the compliance of above points the person issuing the "Permit to Work" shall sign the form(s) as a token of having granted the Permission to Work.
- vii) The person taking permit to work shall adhere to all safety precautions, including those in job protocols, and provide adequate supervision in order to do the job safely and without damage to equipment.
- viii) Permit to work shall be valid for the date of issue only limited to the period specified in the format. However for long duration shut down, the validity of permit may be increased depending upon site condition and discretion of HOD.
- ix) A Work Permit Register shall be maintained by the owner department and electrical department, where the detailed records of all "Permits to Work" issued by the department shall be entered chronologically.
- x) In case of multiple agencies seeking shutdown on same equipment, separate Permit to Work form should be filled by each agency as per the aforementioned procedure. "Multiple Shutdown" seal in Red Color to be put on the form for identification.

3.4 **RETURN / WITHDRAWAL OF PERMIT TO WORK:**

- i) After the job is completed and it is ensured that the material including red flags, barricades, stoppers, earthing bars, etc, have been removed and the men at work have vacated the site, the person who had obtained the permit to work or the person authorized by him shall offer the first copy of the "Permit to Work" form to the issuing authority or in his absence to the authorized person of the owner department (see Format at **APPENDIX**) as a token of having completed the work and handing over of the premises back to the owner department.
- ii) The issuing authority/ authorized representative of the owner department on receiving the first copy of Form from executing authority shall personally verify the safety aspects of men and machines before accepting the premises/equipment for operation/service. The owner department will then approach electrical for energizing the equipment and obtained his signature (whenever applicable). Acceptance shall be recorded, signature affixed on all the copies, 2nd copy will be retained by the owner department and First copy will be returned to the executing authority.
- iii) In case the job is not completed in the same shift or on scheduled time and is completed after the working hours of the issuing authority, the permit to work shall be returned to the authorized person or the competent person authorized by the

issuing authority. The authorization including the name, designation and contact no. of the authorized person for receiving the work permit form and for putting the equipment into operation shall be clearly written in the shift log book and work permit register by the person who granted the permit to work. Besides, the details of authorized person shall be recorded on the format while granting permit to work.

- iv) Any equipment or apparatus on which permit to work has been issued, shall not be normalized/switched on until all shutdowns issued under particular equipment have been duly returned and cancelled. However, due to exigencies such as loss of the permit to work, the equipment shall be normalized only after a certificate to the effect that it is safe to normalize the equipment, is issued by an authority higher than the requisitioning/ executing authority.

REFERENCES

1. IPSS 1-11-007-14 : Procedure for Permit to Work
2. Safety Manual of SAIL, Rourkela Steel Plant
3. Tata Steel's Work Permit safety standard

FORM NO. _____

APPENDIX
[Clause 3.3 (i) & 3.4 (i)]

**FORMAT FOR REQUISITION, PERMISSION AND RETURN/WITHDRAWAL
OF PERMIT TO WORK**

(NAME OF THE PLANT) _____

REQUISITION

- i) Equipment/Location/Area on which job is to be undertaken _____
- ii) Date : _____
Duration From : _____ To: _____ (Hrs.)
- iii) Job(s) to be carried out _____
- iv) Deptt/Agencies involved in the job _____
- v) Whether Electrical/ Operation Shutdown is required? Yes / No
- vi) If yes, please specify the nature of shutdown _____

Executing Authority

Signature & Date _____

Name & Designation _____

Contact/ Mobile NO. _____

PERMISSION

I have verified/ inspected the area and ensured adherence to the points mentioned overleaf.

Required shutdown
given

Permit to Work is granted
to Executing Authority

Signature _____

Signature _____

Name & Designation _____

Name & Designation _____

Contact No. & Date _____

Date _____

Department _____

Contact No. _____

Electrical _____

Representative of Owner Department
/ Operation)

(Shutdown giving Authority)
(Electrical)

RETURN / WITHDRAWAL

The above job is over. All agencies, men and materials have been removed from worksite Equipment/Location/Area may be used for normal operation.	I have checked / inspected the area before clearing the shutdown.	I have checked the position as stated alongside and I accept the above Area/Location/Eqpt. for service/operation
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Signature: _____ Signature: _____ Signature: _____

Name & Designation: _____ Name & Designation: _____ Name & Designation : _____

Time & Date : _____ Time & Date : _____ Time & Date : _____

Department: _____

(Executing Authority/
Authorized representative)

(Shutdown
clearing authority)
(Electrical)

(Issuing Authority/Authorized
Representative of Owner
Deptt)

CHECK POINTS BEFORE GRANTING PERMISSION

(Write "Yes", "No" or "Not required" as applicable)

- i) Whether the job protocol exists? _____
- ii) Have cautions board/tags been displayed at conspicuous places? _____
- ii) Have fuses/ Breakers/ Isolators been removed?

- iv) Has earthing been done? _____
- v) Have hydraulic/air/gas/steam/acid valves been closed? _____
- vi) Has emergency key of valves been put in safe custody? _____
- vii) Has gas/air sample analysis been done? _____
- viii) a) Whether the deptts/sections/individuals likely to be affected have
been communicated about the job/shutdown? _____
b) If yes, which department/section/individuals have been informed

- ix) a) Have associated hazards & precautionary measures Yes/No
been explained to executing agency?
b) Have all personnel/agencies in near vicinity been informed? Yes/No
c) Any other precautions taken? If yes, details _____
- x) Has concerned plant/equipment been put out of Yes/No
operation/switched off?
