



Permit To Work



A **Permit To Work** or **PTW** system is a formal written system used to control certain types of work which are identified as potentially hazardous. It is also a means of communication between site/installation management, plant supervisors and operations and those who carry out the work.

Essential features of P.T.W system are :

- Clear identification of who may authorize particular jobs (and any limits to their authority) and who is responsible for specifying the necessary precautions.
- Training and instruction in the issue and use of permission.
- Monitoring and auditing to ensure that the system works as intended.

The terms "P.T.W", permit or work permit refer to the certificate or form which is used as part of an overall system of work and which has been devised by a company to meet its specific needs.

A P.T.W system aims to ensure that proper planning and consideration is given to the risks of a particular job. The permit is a written document which authorized certain people to carry out specific work, at a certain time and place and which set out the main precautions needed to complete the job safely.

The objectives and functions of such a system can be summarized:

- ⊕ Ensuring the proper authorization of designated work. This may be work of certain types, or work of any type within designated area, other than normal operations.
- ⊕ Specifying the precautions to be taken including safe isolation from potential risks such as hazardous substances and energy sources.
- ⊕ Ensuring that the person in-charge of a unit, plant or installation is aware of all the work being done there.
- ⊕ Providing not only a system of continuous control but also a record showing that the nature of the work and the precautions needed have been checked by an appropriate person or people.
- ⊕ Providing for the suitable display of permits.
- ⊕ Providing a procedure for times when work has to be suspended i.e. stopped for a period before it is complete.
- ⊕ Providing for the procedures or arrangements for work activities that may interact with or affect any of these activities.
- ⊕ Providing a formal hand-over procedure for use when a permit is issued for a period longer than one shift or when permit signatories change.
- ⊕ Providing a formal hand –back procedure to ensure that any part of the plant affected by the work is in a safe condition and ready for reinstatement.

A permit-to-work system is also a means of communication between site/installation management, plant supervisors and operators and those who carry out the hazardous work. Essential features of permit-to-work systems are:

- ⊕ clear identification of who may authorise particular jobs (and any limits to their authority) and who is responsible for specifying the necessary precautions;
- ⊕ training and instruction in the issue, use and closure of permits;
- ⊕ monitoring and auditing to ensure that the system works as intended;
- ⊕ clear identification of the types of work considered hazardous;
- ⊕ clear and standardized identification of tasks, risk assessments, permitted task duration and supplemental or simultaneous activity and control measures.
- ⊕ A permit-to-work system is an integral part of a safe system of work

A permit-to-work is not simply permission to carry out a dangerous job. It is an essential part of a system which determines how that job can be carried out safely, and helps communicate this to those doing the job. It should not be regarded as an easy way to eliminate hazard or reduce risk. **The issue of a permit does not, by itself, make a job safe** - that can only be achieved by those preparing for the work, those supervising the work and those carrying it out. In addition to the permit-to-work system, other precautions may need to be taken - e.g. process or electrical isolation, or access barriers - and these will need to be identified in task risk assessments before any work is undertaken.

The permit-to-work system should ensure that authorized and competent people have thought about foreseeable risks and those risks are avoided by using suitable precautions. Those carrying out the job should think about and understand what they are doing to carry out their work safely, and take the necessary precautions for which they have been trained and made responsible.

The terms 'permit-to-work', 'permit' or 'work permit' refer to the paper or electronic certificate or form which is used as part of an overall system of work, and which has been devised by a company to meet its specific needs.

- ⊕ A permit-to-work system aims to ensure that proper consideration is given to the risks of a particular job or simultaneous activities at site. Whether it is manually or electronically generated, the permit is a detailed document which authorises certain people to carry out specific work at a specific site at a certain time, and which sets out the main precautions needed to complete the job safely.
- ⊕ The objectives and functions of such a system can be summarised as: ensuring the proper authorisation of designated work. This may be work of certain types, or work of any type within certain designated areas other than normal operations;
- ⊕ making clear to people carrying out the work the exact identity, nature and extent of the job and the hazards involved, and any limitations on the extent of the work and the time during which the job may be carried out; specific precautions to be taken, including safe isolation from potential risks such as hazardous substances, electricity and other energy forms
 - ensuring that the person in direct charge of a unit, plant or installation is aware of all hazardous work being done there;
 - providing not only a system of continuous control, but also a record showing that the nature of the work and the precautions needed have been checked by an appropriate person or people;
 - providing for the suitable display of permits ;
 - providing a procedure for times when work has to be suspended, ie stopped for a period before it is complete;
 - providing for the control of work activities that may interact or affect one another;
 - providing a formal handover procedure for use when a permit is issued for a period longer than one shift;
 - providing a formal hand-back procedure to ensure that the part of the plant affected by the work is in a safe condition and ready for reinstatement ;
 - providing a process for change, including the evaluation of change on other planned activity, a determination of when hazards need to be reassessed, and a means for controlled communication of change.

Examples of types of job where additional permits or certificates should be considered:

- work of any type where heat is used or generated (e.g. by welding, flame cutting, grinding etc);
- work which may generate sparks or other sources of ignition;
- work which may involve breaking containment of a flammable, toxic or other dangerous substance and/or pressure system;
- work on high voltage electrical equipment or other work on electrical equipment which may give rise to danger;
- entry and work within tanks and other confined spaces;
- work involving the use of hazardous/dangerous substances, including radioactive materials and explosives;
- diving, including onshore operations near water;
- pressure testing;
- work affecting evacuation, escape or rescue systems;
- work involving temporary equipment, e.g. generators, welding equipment etc;
- work at height;
- any operation which requires additional precautions or personal protective equipment (PPE) to be in place;



Essentials of permit-to-work systems

Display

Copies of a permit-to-work should be clearly displayed:

- at the work site, or in a recognised location near to the work site. (If this is not practicable, e.g. when a job is carried out in a number of locations, then the permit should be kept on the performing authority); and
- in the central or main control or permit co-ordination room, with additional copies at any local control rooms;
- In addition, a copy of the permit should be kept with the issuing authority or with the area authority if that person is not located at the worksite or control room.
- any other potentially high-risk operation.

Suspension

- Work may sometimes have to be suspended, for example:
- if there is a general alarm;
- for operational reasons, eg when the permit is for hot work and process fluid or gas sampling must be carried out at the same time, with the possibility of a release of a dangerous substance;
- while waiting for spares;
- there is a change to the nature or scope of the work;

where there is conflict with another scope of work. It is important to remember that a suspended permit remains live until it is cancelled. This means that there may still be active isolations under a suspended permit.

Suspended permits should be kept on the permit recording system. The work should not be restarted until the issuing authority (see paragraph 29) has verified that it is safe to do so, and has revalidated the permit or issued a new permit. If work is left under a suspended permit, integrity of safety systems or the security of any isolation that has been made is important, and the plant should not be assumed to be safe for normal or other use.

In other cases the permit may be cancelled, so that as far as the permit-to-work system is concerned, the suspended job is treated as if it were new work when it is restarted. This may be the best option if the suspension of work is indefinite and the plant can be brought to a safe condition

Permit interaction

It is important to make sure that one activity under a permit-to-work does not create danger for another, even if the other work does not require a permit-to-work. Those involved with the issue of permits-to-work should be aware of potential interaction, and should ensure that when a permit is prepared, the work to be carried out takes account of other activity currently planned or underway.

Close liaison, in this case, will be necessary, for example through cross-referencing on the permit, the task risk assessment or in the work pack. Again, interacting activities may make special demands upon isolation procedures if isolation is common to more than one job, and isolations should be clearly detailed on the permit or a supporting cross-referenced isolation certificate.

Handover

If work is carried over to another shift, eg the job takes longer than expected, then a shift handover procedure should be in place. This handover procedure should ensure that the incoming shift is aware of any outstanding permit-controlled jobs, the status of those jobs, and the status of the plant. Work-in-progress should be left in a condition that can be reliably communicated to, and understood by, the oncoming shift. A permit log, permit file or display boards are ways of recording ongoing permits. It is essential that there is good communication between incoming and outgoing issuing and performing authorities and it is recommended that the incoming issuing authority signs to allow the continuation of a permit.

- ⊕ The hand-back procedure should include obtaining answers to the following questions:
 - Has the work been completed? This should be confirmed by the performing authority, ie the person to whom the permit was issued.
 - Has the plant or equipment been returned to a safe condition, in particular by removing isolations? Has this been verified by the person responsible for signing off the permit (ie issuing or area authority)?
 - Has the person in control of operational activities acknowledged on the permit that the plant or equipment has been returned to the control of the production staff?



When are P.T.W systems applicable

Permits to work should be considered whenever it is intended to carry out any work which may adversely affect the safety of personnel, the environment or the plant.

They are normally considered to be more appropriate to non-routine activities which may require some form of JSA prior to work commencing.

There will, however, be activities closely related to plant operations where P.T.W systems will be required. Maintenance work carried out by plant operations, for instance, should be subject to P.T.W procedure.

It is also advisable to use a P.T.W system when two or more individuals or groups or people, perhaps from different trades or different contractors, need to co-ordinate their activities to ensure that their

For a permit-to-work system to function properly it must be managed so that personnel within the system are competent and that responsibility is taken for its management. This case study shows how management failings can lead to serious incidents even where a permit has been issued. Clearly understood responsibilities and adequate training (described later in this guidance) are essential.

Two men employed by a contractor died as a result of an explosion and fire in a horizontal brace in a semi-submersible oil exploration rig while it was undergoing repair at dock in Dundee. The rig operator's permit-to-work system was being used at the time of the incident. The explosion was caused by leaks from a propane hose which the contractors were using for welding and cutting. A fatal accident inquiry was held, at which the sheriff identified a number of failings which could have been put right by reasonable precautions and could have prevented the accident.⁴ The failures relating to the operation of the permit-to-work system were found to be;

- ⊕ **Inadequate training;**
 - and poor instruction for the tradesmen and labourers working for the —contractor in the braces on their roles under the rig operator's permit-to-work system;
 - for the contractor's management and workforce and those responsible for —the operation of the permit-to-work system employed by the rig operator, who did not properly understand the system and had not made appropriate provision for its effective operation;
 - for the deputy offshore installation manager (OIM) in the operation of the —permit-to-work system;
 - for the general foremen employed by the contractor, who had not been —properly instructed in their functions within the permit-to-work system.
- ⊕ **Incompetent management:**
 - the operator had not properly considered the competence of the OIM, given —his complete lack of understanding of the critical importance of a permit-to-work system, and had not provided him with any support in overseeing the repair work being carried out;
 - the OIM had failed to operate the permit-to-work system properly, work sites —had not been inspected, he was not properly aware of the nature of the work being carried out, he had not determined what precautions were necessary, that they were in place and that workers were adequately trained to use them.
- ⊕ **Poor working practices:**
 - certificates and permits issued under the permit-to-work system had not —been adequately completed and the necessary precautions had not been implemented;
 - the certificates and permits issued under the system were not displayed at —the work sites.
- ⊕ **Inadequate communication:**
 - neither the rig operator nor the contractor had, at the appropriate —management level, established a system for adequate communication between the two companies on safety issues arising in the course of the work, and had not determined who would be responsible for matters such as supervision of the permit-to-work system and the implementation of precautions identified in the risk assessments.



On Piper Alpha suspended permits were kept in the safety office, NOT in the control room, as it was claimed there was not enough room. A lead production operator could be aware of a permit-to-work if it was one of the permits which came to him for suspension in the 45 minutes before he officially came on shift. However, it would be completely unknown to him if it had been suspended days before, or earlier on the same day before he arrived in the control room for the handover. The correlation of suspended and active permits was made more difficult by the fact that in the safety office, suspended permits were filed according to trade involved rather than location. This made it difficult for any supervisor to readily check which equipment was isolated for maintenance.

It was also found that there were often large numbers of suspended permits, some of which had been suspended for months e.g. in February 1998, five months before the disaster, 124 permits-to-work were found to be outstanding. This added to the difficulty of checking which equipment was undergoing maintenance.

Suggested colours for different Permits

Type of PERMIT	Suggested Colour
Hot Work	Red-edged or red
Cold Work	Blue-edged or blue
Confined Space entry	Green-edged or green
Equipment disjuncting certificate / breaking containment permit	Black-edged
Isolation Permit	White
High Voltage Electrical Isolation Permit	Yellow-edged or yellow
Sanction To Test	White
Excavation Permit	White
Diving Permit	White(or relevant colour as agreed)



How does Permit To Work Looks

General advice on the design of a permit is given below. Factors to consider include:

- ⊕ keep sentences short and simple;
- ⊕ clearly state **who** does **what** and **when**;
- ⊕ use colour-coding (e.g. to illustrate individual roles);
- ⊕ use the present tense and the active voice;
- ⊕ do not use text fonts smaller than 8 point;
- ⊕ place items on the permit in the order they are performed;
- ⊕ make cross-referencing easy – keep related information together;
- ⊕ make use of open space in the text – avoid 'clutter';
- ⊕ use UPPER CASE sparingly for emphasis;
- ⊕ leave enough room for descriptions (eg to list area involved, hazards and precautions), specifying the level of detail required;
- ⊕ provide actual quantitative values and limits (eg don't just say 'must not exceed a critical level').

1 Permit title	2 Permit reference number Reference to other relevant permits or isolation certificates
3 Job location	
4 Plant identification	
5 Description of work to be done and its limitations	
6 Hazard identification – including residual hazards and hazards associated with the work	
7 Precautions necessary and actions in the event of an emergency – people who carried out precautions, eg isolating authority, should sign that precautions have been taken	
8 Protective equipment (including PPE)	
9 Issue – signature (issuing authority) confirming that isolations have been made and precautions taken, except where these can only be taken during the work. Date and time duration of permit. In the case of high hazard work a further signature from the permit authoriser will be needed	
10 Acceptance – signature confirming understanding of work to be done, hazards involved and precautions required. Also confirming permit information has been explained to all permit users	
11 Extension/shift handover procedures – signatures confirming checks made that plant remains safe to be worked upon, and new performing authorities and permit users made fully aware of hazards/precautions. New expiry time given	
12 Hand-back – signed by performing authority certifying work completed. Signed by issuing authority certifying work completed and plant ready for testing and recommissioning	
13 Cancellation – certifying work tested and plant satisfactorily recommissioned	



Reference

The following websites and books have been referred in compiling this topic. They are also suggested for further readings to increase and enhancement of knowledge in health and safety.

WEBSITES

1. http://en.wikipedia.org/wiki/Bhopal_disaster
2. <http://www.cdc.gov/niosh/topics/highwayworkzones/BAD/imagelookup.html>
3. <http://www.cdc.gov/niosh/az/a.html>
4. <http://chemicalsafety.com/>
5. http://www.clipartguide.com/search_terms/safety.html
6. <http://www.rosopa.com/occupational-safety/adviceandinformation/health-and-safety-careers.aspx>
7. <http://www.epa.gov/wastes/nonhaz/municipal/dmg2/>
8. http://en.wikipedia.org/wiki/Emergency_management
9. <http://fyi.uwex.edu/agsafety/osha-wi-dairy-farm-lep/>
10. <https://www.gov.uk/government/publications/emergency-preparedness>
11. <http://www.environment.gen.tr/what-is-environment.html>
12. <http://www.eionet.europa.eu/gemet/concept?ns=1&cp=2778>
13. http://en.wikipedia.org/wiki/Environmental_management_system
14. <http://www.scafftag.co.uk/>
15. <http://www-group.slac.stanford.edu/esh/eshmanual/>
16. http://www-group.slac.stanford.edu/esh/hazardous_activities/fall_protection/
17. <https://www.gov.uk/workplace-fire-safety-your-responsibilities/fire-safety-advice-documents>
18. http://www.safetyvideosnow.com/Gory_Safety_Videos_s/42.htm
19. <http://xnet.rrc.mb.ca/rcharney/guidelines%20for%20access%20scaffolding.htm>
20. <http://www.hanford.gov/page.cfm/HoistingRiggingManual>
21. <http://www.legislation.gov.uk/ukpga/1974/37/contents>
22. http://www.healthandsafetytips.co.uk/Toolbox_Talks.htm
23. <http://www.nhscareers.nhs.uk/explore-by-career/wider-healthcare-team/careers-in-the-wider-healthcare-team/support-services/health-and-safety-officer/>
24. <http://www.scsaonline.ca/classroom/hoisting-a-rigging-safety-awareness>
25. http://www.jump4biz.com/BSP_Health_and_Safety_Management_faqs/Measuring_Health_and_Safety.php
26. <http://www.lboro.ac.uk/admin/hse/fire/>
27. <http://www.ntnu.edu/hse/guidelines/d>
28. <http://www.hse.gov.uk/index.htm>
29. http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/en/hsw_acc_work_esms.htm
30. <http://aehap.org/>
31. https://osha.europa.eu/en/publications/reports/TE3008390ENC_chemical_risks
32. <http://www.hse.gov.uk/workplacetransport/safetysigns/banksman/banksman.htm#>
33. <http://www.trafficsign.us/index.html>
34. http://en.wikipedia.org/wiki/List_of_environmental_issues
35. http://www.ask-ehs.com/animation/showcase.htm?goback=gde_4006766_member_209398648
36. <http://actrav.itcilo.org/actrav-english/telearn/osh/noise/nomain.htm>
37. <http://guide8.net/material-safety-data-sheet-e816.pdf>
38. <http://www.dr.illinois.edu/css/factsheets/msdss.aspx>
39. <http://www2.worksafebc.com/Portals/MetalMineral/General.asp?ReportID=32710>
40. <http://www.myfuture.edu.au/The%20Facts/Work%20and%20Employment/Occupations/Details.aspx?anzsco=251312A>
41. http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/296_97_11
42. <http://www.hse.gov.uk/waste/health.htm>
43. <http://www.hseaustralia.com.au/occupational-hygiene>
44. <http://www.ohsrep.org.au/hazards/chemicals/chemicals-management-in-workplaces/index.cfm>
45. https://osha.europa.eu/en/topics/osm/reports/european_system_004.stm

46. <http://www.medialabinc.net/osha-fire-safety.aspx>
47. <http://www.mysafetysign.com/osha-signs>
48. <http://www.safebottles.co.nz/News/Plastics+and+the+Environment.html>
49. <http://www2.worksafebc.com/Publications/OHSRegulation/Part14.asp?ReportID=18526>
50. <http://www.safetyrisk.com.au/safety-photos/>
51. <http://www.orchardhireandsales.ltd.uk/scaffold-ancillaries.htm>
52. <http://www.wisc-online.com/objects/MTL2702/mlt2702.htm>
53. <http://www.authorstream.com/Presentation/ashu912-661146-solid-waste-management/>
54. <http://infochangeindia.org/agenda/occupational-safety-and-health/status-of-occupational-safety-and-health-in-india.html>
55. <http://www.independent.co.uk/life-style/health-and-families/features/take-care-a-history-of-health-and-safety-in-the-workplace-2275437.html>
56. <http://ebookbrowse.net/tbt-037-lifting-equipment-and-operations-pdf-d302813072>
57. <http://www.ehso.com/hmerg.php>
58. <http://www.toxicsaction.org/problems-and-solutions/waste>
59. <http://www.ehs.washington.edu/forms/index.shtml>
60. <http://www.didacindustrial.co.uk/courses/banksman/vehicle-banksman-training/>
61. <http://www.anr.state.vt.us/dec/wastediv/R3/decwppplan.htm>
62. <http://ehs.ucsb.edu/units/labsfty/labrsc/chemistry/lchemwhatmsds.htm>
63. <http://www.dec.ny.gov/chemical/8732.html>
64. http://www.elcosh.org/document/1666/d000573/OSHA%2527s%2BApproach%2Bto%2BNoise%2BExposure%2Bin%2BConstructi on.html?show_text=1
65. http://www.indohistory.com/the_first_factories_act.html

BOOKS AND ARTICLES

1. Investigation Guidance, PART 1 The role of the senior manager, .Guidance and examples of good practices in accident investigation in Britain's railway industry, www.rssb.co.uk
2. Investigation Guidance ,PART 2 Development of policy and management arrangements, Guidance and examples of good practices in accident investigation in Britain's railway industry, www.rssb.co.uk
3. Investigation Guidance, PART 3 Practical support for accident investigators, Guidance and examples of good practices in accident investigation in Britain's railway industry, www.rssb.co.uk
4. Expert forecast on emerging chemical, risks related to occupational, safety and health, EUROPEAN RISK OBSERVATORY REPORT, European Agency for Safety and Health at Work
5. Chemical safety in the workplace, HEALTH AND SAFETY AUTHORITY, Ireland, www.hsa.ie
6. Safety in the use of chemicals at work, ILO , Geneva
7. Emergency Response Guidebook, 2008, A GUIDEBOOK FOR FIRST RESPONDERS DURING THE INITIAL PHASE OF A DANGEROUS GOODS/ HAZARDOUS MATERIALS TRANSPORTATION INCIDENT
8. HOW DO I READ A MATERIAL SAFETY DATA SHEET (MSDS)? Produced by the University of California, Los Angeles, Labor Occupational Safety and Health (LOSH) Program, August 2003.
9. NFPA 704 – 2007, FAQs, nfpa704@nfpa.org
10. http://en.wikipedia.org/wiki/File:Nalgene_bottles.jpg
11. Your steps to chemical safety, A guide for small business, Health and Safety Authority, Ireland
12. Confined spaces, A brief guide to working safely, HSE, UK
13. IACS, CONFINED SPACE SAFE PRACTICE, www.iacs.org.uk
14. A guide to Safety in Confined Space, by Ted Pettit and Herb Linn, US Department of Health and Human Services, Public Health Service, Center for Disease control, National Institute of Occupational and Health
15. Electricity at work, Safe working practices, HSE, UK
16. Electrical Safety , Safety and Health for Electrical Trades, Students Manual, US Department of Health and Human Services, Public Health Service, Center for Disease control, National Institute of Occupational and Health
17. Electrical Safety and You , HSE , UK
18. <http://www.samhsa.gov/csatsdisasterrecovery/preparedness/disasterReliefGrantProgramEPP.pdf>
19. <http://emc.uoregon.edu/content/mission-objectives-and-strategic-plan> (Photo)
20. <http://www.safetyplanninggroup.com/services.php#FSP> (Photo)

21. Principal Emergency Response and Preparedness -
http://scholar.google.com/scholar?q=Principal+Emergency+Response+and+Preparedness&hl=en&as_sdt=0&as_vis=1&oi=scholar&sa=X&ei=XM4cUvHfIKGf0QW58YCoAw&ved=0CCYQgQMwAA
22. https://www.osha.gov/OshDoc/data_General_Facts/factsheet-workplaceemergencies.pdf
23. emergency-exit-routes-factsheet –OSHA
24. Conducting an Accident Investigation, Oregon OSHA,, Department of Consumer and Business Services
25. Health and Safety Executive -Accident Investigations in Practice
26. <http://www.labtrain.noaa.gov/osha600/refer/menu16a.pdf>
27. evacuating-highrise-factsheet- OSHA
28. Planning and Responding to Workplace Emergencies- OSHA Factsheet
29. Environmental Emergency Plan, Environmental Guidelines, Correctional Service, Canada
30. EMERGENCY MANAGEMENT PLAN, (revised June 2012), University of Regina
31. FRAMEWORK FOR MAJOR EMERGENCY MANAGEMENT, GUIDANCE DOCUMENT 2, A GUIDE TO PREPARING A MAJOR EMERGENCY PLAN, JANUARY 2010,Fire Services and Emergency Planning Section, Department of the Environment, Heritage & Local Government, Custom House, Dublin
32. Mongbwalu Project Emergency Preparedness and Response Plan, Ashanti Goldfields Kilo S.A.R.L., Author- Briony Liber (MPhil (Environmental Management); CEAPSA)
33. Landon Borough of Havering, Emergency Planning Handbook
34. Environmental Accident Management Plan, Gethyn Powell Skips
35. EMERGENCY RESPONSE PLAN, USC School Of Dentistry
36. EMERGENCY PLANNING , EXTRACTION FROM: SAFETY MANAGEMENT SYSTEM FOR MAJOR HAZARD FACILITIES - BOOKLET 3: Part 7.17
37. How to prepare an emergency response plan for your small business, Worksafe BC
38. EMERGENCY MANAGEMENT PLAN, Illinios State University
39. GRIFFITH UNIVERSITY, EMERGENCY MANAGEMENT PLAN
40. ENVIRONMENTAL HEALTH EMERGENCY RESPONSE PLAN, Georgia department of Public health, Environment Health Section
41. Implementation Guidelines for Part 8 of the Canadian Environmental Protection Act, 1999 – Environmental Emergency Plans
42. Emergency Planning , Guidance for Hazardous Industry, Australian and New Zealand, Hazardous Industry Planning Taskforce
43. Emergency Management Australia , EMERGENCY PLANNING, Australian Government, Attorney- General's Department,
44. THE LONDON BOROUGH OF HAVERING, EMERGENCY PLANNING AND BUSINESS CONTINUITY SERVICE, MAJOR EMERGENCY PLAN Jan 2012 Version 1.1
45. Environmental Management Guidelines for Small Businesses, Raising Environmental Awareness, Published by the Small Firms Association , Dublin
46. A COMPARATIVE STUDY ON ENVIRONMENTAL, AWARENESS AND ENVIRONMENTALLY BENEFICIAL, BEHAVIOR IN INDIA, CMS ENVIS Centre, Centre for Media Studies, New Delhi
47. CCC Environmental plan, TEP, Mauritania
48. Management of Noise and Vibration: Construction and Maintenance Activities , OPERATIONAL INSTRUCTION 21.7, Department of planning, Transport Infrastructure, Government of South Australia
49. ENVIRONMENTAL MANAGEMENT GUIDELINES, CONTRACTOR REQUIREMENTS, Nakheel
50. Chapter 11, Environmental Management Systems ,Indiana Small Business Guide to Environmental, Safety and Health Regulations
51. Manual for Implementing EMS in SME, <http://www.ifc.org/ifcext/enviro.nsf/content/EMS>
52. Second Edition, Environmental Management Systems: An Implementation Guide for Small and Medium-Sized Organizations , NSF International, Ann Arbor, Michigan
53. Standardizing Excellence: Working with Smaller Businesses to Implement Environmental Management Systems, Green Business Network , The National Environmental Education & Training Foundation
54. Construction Impact Mitigation, Best Practice #13 ,Best Practices for Sustainable Wind Energy Development in the Great Lakes Region | Great Lakes Wind Collaborative
55. BRITISH COLUMBIA , HAZARDOUS MATERIAL RESPONSE PLAN , Ministry of Environment
56. IEMA, Introduction to Environment management System,
57. What Is Integrated Solid Waste Management? United States Environmental Protection Agency, Solid Waste and Emergency Response
58. introduction_solid_waste_management_kfw_en[1]
59. Construction Site Safety , 31. Part 1. Waste Management , CITB
60. Construction Site Safety , 31. Part 2. Environmental Management, CITB

61. Module 17, Pollution Control, CHSS, NEBOSH , IGC, Course
62. Guidelines for the Treatment of Noise and Vibration in National Road Schemes, NATIONAL ROADS AUTHORITY
63. NOISE AND VIBRATION ASSESSMENT FACT SHEET – JUNE 2010, British Columbia, Canada
64. MRA – Helena West: Noise and Vibration Management Plan, Australia
65. Hazardous Materials Emergency Planning Guide , NATIONAL RESPONSE TEAM
66. Semporna Islands Project Educational and information materials produced in Bahasa Malaysia and English
67. Tool Kit for Solid Waste Management Intermountain Region - National Park Service
68. Solid Waste Management in Emergencies, www.iboro.ac.uk/wedc
69. EMERGENCY RESPONSE PLAN, MINISTRY OF THE ENVIRONMENT, Ontario
70. TCMT Environment Management CEMP, TEP, Mauritania
71. TECHNICAL NOTES ON DRINKING-WATER, SANITATION AND HYGIENE IN EMERGENCIES , WHO
72. DEVELOPING INTEGRATED SOLID WASTE MANAGEMENT PLAN TRAINING MANUAL, United Nations Environment Programme
73. Construction depots near sensitive water resources, Water quality awareness brochure no. 14 June 2008, Department of Water, Government of Western Australia
74. What a Waste: May 1999 , Solid Waste Management in Asia, Urban Development Sector Unit East Asia and Pacific Region, The International Bank for Reconstruction and Development/THE WORLD BANK, Washington, USA
75. Environment, Mayank Kumar
76. TRADES GUIDELINES – EXCAVATION AND TRENCHING, Construction Safety Association
77. TRENCHING SAFETY ,INTRODUCTION TO TRENCHING HAZARDS , Infrastructure Health & Safety Association, Canada
78. EXCAVATION SAFETY GUIDE & DIRECTORY , Pipeline Association for Public Awareness
79. A Guide to Safety in Excavations, Health and Safety Authority, Dublin
80. Excavation Safety SLAC National Accelerator Laboratory , Environment, Safety & Health Division
81. APPROVED CODE OF PRACTICE FOR SAFETY IN EXCAVATION AND SHAFTS FOR FOUNDATIONS, Published by the Occupational Safety and Health Service, Department of Labour, Wellington , New Zealand
82. A Guide to OSHA Excavations Standard, Occupational Safety and Health Division , N.C. Department of Labour
83. EXCAVATION WORK , Code of Practice, Safe Work Australia
84. Excavation Safety, Division of Workers' Compensation, Texas
85. Safety Manual for Excavation, Bureau of Workers Compensation, Ohio
86. Excavations, Occupational Safety and Health Administration, U.S. Department of Labor
87. Soil description and classification, Based on part of the GeotechniCAL reference package, by Prof. John Atkinson, City University, London
88. What is soil plasticity? B.C.'s Watershed Restoration Technical Bulletin
89. Controlling fire and explosion risks in the workplace, HSE, UK
90. EMPLOYEE FIRE AND LIFE SAFETY, National Fire Protection Association
91. FIRE SAFETY HANDBOOK, For Apartment Managers, Seattle Fire Department Fire Prevention Division
92. Fire & Life Safety Management Guide, www.hopkinsmedicine.org/hse/guidance
93. Fire safety in construction, HSE, UK
94. Fire Safety in workplace, OSHA Factsheet, OSHA
95. Workplace health, safety and welfare, Workplace (Health, Safety and Welfare) Regulations 1992, Approved Code of Practice, HSE, UK
96. Flame arresters, HSE, UK
97. Management of health and safety at work, Management of Health and Safety at Work Regulations, 1999, Approved Code of Practice & guidance, HSE, UK
98. A short guide to making your premises safe from fire, Regulatory Reform (Fire Safety) Order 2005, Chief Fire Officer's Association, HM Government
99. Safe handling of combustible dusts: Precautions against explosions, HSE, UK
100. Fire Safety for Wheelchair Users at Work and at Home, United Spinal Association, Jackson Heights, NY
101. Confined Space Guidelines, www.labour.gov.on.ca
102. Hot work safety guidelines 2011, The Federation of Finnish Financial Services, Bulevardi , Helsinki
103. Managing Hot Work, Workplace Health and Safety Bulletin, Alberta
104. UC Monthly Safety Spotlight, February 2012, Shop and Tool Safety, Electrical Safety, What is "EI-LOTO" and Why is it so Important?

105. Lockout/Tagout Manual, ENVIRONMENTAL HEALTH AND SAFETY, Iowa State University
106. PSU Lockout/Tagout Training for Authorized Employees, www.ehs.psu.edu
107. Introduction to principles and concepts of Effective Machine Guarding , OSTN Effective Machine Guarding
108. A Guide to Machine Safeguarding, Occupational Safety and Health Division , N.C. Department of Labor,
109. Code of practice on safety and health in the use of machinery, Programme on Safety and Health at Work and the Environment, INTERNATIONAL LABOUR ORGANIZATION
110. General Principles for Machine Safety: www.osh.govt.nz
111. Machine Guarding, Government of South Australia
112. Safeguarding Equipment and Protecting Employees from Amputations, OSHA
113. PRINCIPLES OF MACHINE GUARDING, NS Wales Gov.
114. Machine Safeguarding at the Point of Operation - A Guide for Finding Solutions to Machine Hazards , Oregon OSHA
115. NOISE AT WORK - Advice for employers, HSE, UK
116. Full-Body Safety Harnesses Installation, Operation, and Maintenance, AO Safety/SafeWaze User Instruction Harness Manual
117. A short guide to the Personal Protective Equipment at Work Regulations 1992, HSE, UK
118. OSHA GUIDANCE DOCUMENT, FALL PROTECTION IN RESIDENTIAL CONSTRUCTION
119. Falling Off Ladders Can Kill: Use Them Safely, OSHA
120. Nail Gun Safety A Guide for Construction Contractors , National Institute for Occupational Safety and Health, Department of Labor, Occupational Safety and Health Administration
121. OSHA Pocket Guide
122. Personal Protective Equipment, OSHA
123. Personal Protective Equipment, OSHA Factsheet
124. Personal Protective Equipment Selection Guide, Environmental Health & Safety Stony Brook University
125. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, SMALL ENTITY COMPLIANCE GUIDE FOR FINAL RULE FOR CRANES AND DERRICKS IN CONSTRUCTION
126. Worldwide Occupational Road Safety (WORS) Review Project, Department of Health and Human Services Centers for Disease Control and Prevention National Institute for Occupational Safety and Health,
127. Guidance on permit-to-work systems , A guide for the petroleum, chemical and allied industries, HSE UK
128. Permit to work systems, HSE UK
129. Guidelines on Permit to work (PTW) systems, OGP
130. Temporary Structures Shoring, scaffolding, and underpinning, University of Washington, DEPARTMENT OF Construction Management
131. A Guide to Safe Scaffolding, N.C. Department of Labor Occupational Safety and Health Division

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