Human factors self-assessment tool for safety management systems – template

|  |  |
| --- | --- |
| Operator/licensee |  |
| Facility |  |
| Inspection location |  |
| Assessment date(s) |  |
| Legislation |  |
| Licence |  |

# Part 1 Managing human reliability

| **Item** | **Check** | **Level** | | | | | **Evidence sighted** | **Comments** |
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| **1** | **2** | **3** | **4** | **5** |
| 1.1 | For different operating conditions (i.e. normal operations, abnormal operating conditions, maintenance, start-up and shutdowns, and emergency situations), has there been an analysis to identify conditions influencing human performance for safety-critical tasks? |  |  |  |  |  |  |  |
| 1.2 | Does this site identify and record key steps for safety-critical tasks through consultation with operators, walking through the operation and review of documentation (e.g. job task analysis, safe work operating procedures)? |  |  |  |  |  |  |  |
| 1.3 | Are controls for safety-critical tasks reviewed on a regular basis to ensure they perform as intended and remain effective? |  |  |  |  |  |  |  |
| **Human factors in incident investigation** | | | | | | | | |
| 1.4 | Have the people who are investigating incidents received training and information regarding human factors (HF)? |  |  |  |  |  |  |  |
| 1.5 | Are multidisciplinary teams (e.g. Health Safety Environment advisors, people who perform the work, people involved in the incident) consulted and involved in incident investigations? |  |  |  |  |  |  |  |
| 1.6 | Do incident investigations focus on identifying latent conditions (i.e. weaknesses in the system and performance-shaping factors) and active errors? |  |  |  |  |  |  |  |
| 1.7 | Are performance-shaping factors for high potential incidents (i.e. potential to cause a fatality or major incident) identified? |  |  |  |  |  |  |  |
| 1.8 | Are incident remediation actions continually applied to the identified human factors until ALARP or SFARP is reached? Are they based on the hierarchy of control? |  |  |  |  |  |  |  |
| 1.9 | Are leaders and senior managers involved in the review of high potential incidents and ensure any follow-up action is appropriate and closed out in a timely manner? |  |  |  |  |  |  |  |
| 1.10 | Are key learnings from incident investigations disseminated to the workforce and used to improve safety systems? |  |  |  |  |  |  |  |

# Part 2 Usable procedures

| **Item** | **Check** | **Level** | | | | | **Evidence sighted** | **Comments** |
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| **1** | **2** | **3** | **4** | **5** |
| 2.1 | Do current procedures cover the range of areas/operations in adequate detail including: | | | | | |  |  |
| * Plant start-up and shutdown? |  |  |  |  |  |  |  |
| * Plant operation? |  |  |  |  |  |  |  |
| * Maintenance operations? |  |  |  |  |  |  |  |
| * Emergency response? |  |  |  |  |  |  |  |
| 2.2 | Are procedures reviewed to increase the likelihood of achieving desired  performance outcomes and reducing the likelihood of human failure, including: | | | | | |  |  |
| * the language, format and type of procedure caters to all types of users   including culturally and linguistically  diverse groups, levels of literacy, visual  and cognitive differences? |  |  |  |  |  |  |  |
| * procedures are clear, fit-for-purpose and provide an appropriate level of detail to ensure the tasks are carried out consistently by all users? |  |  |  |  |  |  |  |
| 2.3 | Is the system for updating procedures accessible, timely and achievable? |  |  |  |  |  |  |  |
| 2.4 | Do all safety-critical tasks have procedures  and associated job aids (e.g. checklists,  flow charts) that are clear, fit-for-purpose  and cater for the operating condition (i.e.  routine, safety-critical, emergency and  upset conditions?) |  |  |  |  |  |  |  |

# Part 3 Training and competence

| **Item** | **Check** | **Level** | | | | | **Evidence sighted** | **Comments** |
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| **1** | **2** | **3** | **4** | **5** |
| 3.1 | Are training needs analyses conducted  for safety-critical tasks which includes  different operating conditions? That is:   * design, construction, operations, * maintenance, projects, and contractor * work * routine and non-routine tasks * normal operating conditions * abnormal and emergency conditions * facility changes * emergency response conditions |  |  |  |  |  |  |  |
| 3.2 | Are training and competency matrices  available which clearly identify training and  competency requirements to carry out role  specific activities? |  |  |  |  |  |  |  |
| 3.3 | Is training on human factors provided for  personnel who hold safety-critical roles? |  |  |  |  |  |  |  |
| 3.4 | After training and completing any  additional learning activities (e.g. high risk  work, confined space, crane and forklift  operations, process plant operation),  is competency independently verified  before individuals are allowed to work  independently? |  |  |  |  |  |  |  |
| 3.5 | Is refresher training provided regularly (e.g.  every two years and prior to tasks being  performed) for the infrequent safety-critical  tasks (e.g. plant start-up)? This includes  contractors. |  |  |  |  |  |  |  |
| 3.6 | Is the training and competency system  regularly audited to ensure training and  competency requirements are current and  maintained? |  |  |  |  |  |  |  |

# Part 4 Staffing and workload (including supervision)

| **Item** | **Check** | **Level** | | | | | **Evidence sighted** | **Comments** |
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| **1** | **2** | **3** | **4** | **5** |
| 4.1 | Are risk assessments or reviews  conducted to determine the required  staffing levels and mix of skills for effective  performance of safety-critical tasks under  different operating conditions (i.e. normal  operating conditions, abnormal and  emergency conditions, facility changes,  emergency response conditions)? |  |  |  |  |  |  |  |
| 4.2 | Are staffing levels regularly monitored  against operational changes (i.e. shut  down, downsizing, construction, upgrades)  to ensure resourcing remains appropriate  for the effective performance of safety-critical tasks? |  |  |  |  |  |  |  |
| 4.3 | Are functional job assessments conducted  for each type of job role (e.g. office-based,  field-based), which includes identifying  physical, cognitive and emotional work  demands? |  |  |  |  |  |  |  |
| 4.4 | Are risk assessments or reviews  undertaken to ensure the span of control  of supervision is appropriate for the type of  tasks being performed, and the experience,  skills and knowledge of workers  performing the tasks? |  |  |  |  |  |  |  |
| 4.5 | Do supervisors have the required training  and competencies to identify and control  hazards, and respond to emergency and  recovery situations? |  |  |  |  |  |  |  |
| 4.6 | Fatigue risk management: | | | | | |  |  |
| * Is there a fatigue risk management procedure in place? |  |  |  |  |  |  |  |
| * Does the fatigue risk management procedure set out minimum requirements to mitigate the risks of fatigue (i.e. hours of work, irregular or extended work hours, physically or mentally demanding work, repetitive tasks)? |  |  |  |  |  |  |  |
| * Are compliance audits on the fatigue risk management system conducted   and results implemented? |  |  |  |  |  |  |  |
| * Are assurance checks undertaken during shut down, emergency and irregular conditions to ensure the fatigue risk management plan is being adhered to? |  |  |  |  |  |  |  |

# Part 5 Management of change

| **Item** | **Check** | **Level** | | | | | **Evidence sighted** | **Comments** |
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| **1** | **2** | **3** | **4** | **5** |
| 5.1 | Is there a process for managing change  that includes clear objectives, leadership  responsibilities for senior management  and a structured procedure, including a  communication plan? |  |  |  |  |  |  |  |
| 5.2 | Does consultation occur with personnel  impacted by the change? |  |  |  |  |  |  |  |
| 5.3 | Do risk assessments consider the impact  of performance-shaping factors (including  the impact of the change process on  workers)? |  |  |  |  |  |  |  |
| 5.4 | Are training and competency requirements  reviewed as part of the management of  change? |  |  |  |  |  |  |  |
| 5.5 | Do management of change processes  identify key trigger events that may impact  the validity of competency profiles (i.e.  environmental conditions, staff resourcing,  and introduction of new or modified  activities, positions, technologies, plant,  equipment, systems, or procedures)? |  |  |  |  |  |  |  |
| 5.6 | Does the management of change process include reviewing and monitoring the  change to ensure effective performance  of associated safety-critical tasks and  other procedures (i.e. maintenance and  operational work instructions)? |  |  |  |  |  |  |  |

# Part 6 Safety-critical communications

| **Item** | **Check** | **Level** | | | | | **Evidence sighted** | **Comments** |
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| **1** | **2** | **3** | **4** | **5** |
| 6.1 | Are there defined communication  processes for safety-critical tasks (e.g.  permit-to-work, shift handover, control  room to field operator, maintenance  communications, emergency response)? |  |  |  |  |  |  |  |
| 6.2 | Is major hazard information  communicated to workers, contractors,  temporary staff and visitors? |  |  |  |  |  |  |  |
| 6.3 | Is there a process for communicating lessons from safety incidents and changes in practice? |  |  |  |  |  |  |  |
| 6.4 | Is there a process to ensure safety-critical information has been received and understood by all relevant personnel (e.g.  toolbox talks, training, checklists)? |  |  |  |  |  |  |  |
| 6.5 | Is there a process which outlines how personnel can report safety concerns without fear of retribution? |  |  |  |  |  |  |  |
| 6.6 | Are opportunities to identify human factors  proactively implemented (e.g. learning  teams, post job debriefs, discussing  performance-shaping factors during pre-starts and toolbox talks)? |  |  |  |  |  |  |  |

# Part 7 Designing for people

| **Item** | **Check** | **Level** | | | | | **Evidence sighted** | **Comments** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** |
| **Human-machine interaction** | | | | | | | | |
| 7.1 | Is machinery assessed against ergonomic principles to determine the suitability for operators and the intended tasks? For example, the ergonomic principles recommended in AS/NZS 4024.1:2019. |  |  |  |  |  |  |  |
| 7.2 | Are assessments conducted to ensure displays, controls, actuators and signals  conform to ergonomic requirements? For  example, the requirements outlined in AS/NZS 4024.1:2019. |  |  |  |  |  |  |  |
| **Alarm management system** | | | | | | | | |
| 7.3 | Are human factors principles applied to the design of alarm management systems to ensure maximum usability and effectiveness? For example, the human  factors principles recommended in  AS IEC 62682:2017. |  |  |  |  |  |  |  |
| 7.4 | Does the alarm management system recognise different operational states,  different operator needs (e.g. normal/  upset/emergency) and what has and hasn’t  occurred? |  |  |  |  |  |  |  |
| 7.5 | Are reviews of the current alarm  management system conducted and  recommendations from the review, if any,  implemented? |  |  |  |  |  |  |  |
| 7.6 | Are safety-critical alarms clearly  distinguished and separately displayed? |  |  |  |  |  |  |  |
| 7.7 | Is the alarm list and required response  process readily available and  understandable to the operator? |  |  |  |  |  |  |  |
| **Work environment** | | | | | | |  |  |
| 7.8 | Are risk assessments of environmental  conditions (e.g. heat, noise, dust, available  workspace, technology) conducted and  risks controlled to ALARP or SFARP? |  |  |  |  |  |  |  |
| 7.9 | Are assessments conducted to ensure  lighting is appropriate for the tasks being  carried out and directional sources of  light are controlled to ALARP or SFARP?  For example, close, accurate work will  require higher light levels. Lighting  recommendations are outlined in  AS/NZS 1680: 2009. |  |  |  |  |  |  |  |
| 7.10 | Are assessments to identify whether  noise might interfere with safety-critical  communications conducted? This includes:   * Emergency sirens are audible from all areas of the site * Radio blackspots are identified and the location communicated to personnel |  |  |  |  |  |  |  |
| **Designing jobs for mental health and wellbeing** | | | | | | | | |
| 7.11 | Are good work design principles (i.e. roster  design, work demands, support, autonomy)  applied to the design of jobs? |  |  |  |  |  |  |  |
| 7.12 | Are risk assessments of workplace  psychosocial hazards conducted and risks  controlled to ALARP or SFARP? |  |  |  |  |  |  |  |

# Part 8 Fitness for work

| **Item** | **Check** | **Level** | | | | | **Evidence sighted** | **Comments** |
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| **1** | **2** | **3** | **4** | **5** |
| 8.1 | Is there a fitness for work (FFW) policy  covering fatigue, medical fitness (i.e.  physical health and functional capacity),  mental health and wellbeing, and alcohol  and other drug use? |  |  |  |  |  |  |  |
| 8.2 | Does the FFW policy or procedure  acknowledge that both work-related and  personal factors contribute to mental  health and wellbeing? |  |  |  |  |  |  |  |
| 8.3 | Is there an FFW procedure that outlines  the process for assessment/evaluation  and controls (i.e. removal to a safe work  area, evacuation for medical evaluation,  and options for an escorted evacuation  from site to a safe work area or medical  evaluation)? |  |  |  |  |  |  |  |
| 8.4 | Is there a policy disallowing alcohol  consumption in the workplace? |  |  |  |  |  |  |  |
| 8.5 | Does the workplace culture discourage the  excessive consumption of alcohol at work-related social events and in work provided  camp and village accommodation? |  |  |  |  |  |  |  |
| 8.6 | Is there a no tolerance approach to illegal  drugs? What strategies are implemented? |  |  |  |  |  |  |  |
| 8.7 | Is training provided to those with  management and supervisory  responsibilities outlined in the FFW policy  or procedure on the types of factors  affecting FFW, assessment methods and  process? |  |  |  |  |  |  |  |
| 8.8 | Is there a policy or procedure which outlines the requirements for welfare checks and checks for unauthorised absence from shift/work? |  |  |  |  |  |  |  |
| 8.9 | Is training and information provided to  personnel on the FFW policy, procedure  and conditions that may impact their FFW? |  |  |  |  |  |  |  |

# Part 9 Health and safety culture

| **Item** | **Check** | **Level** | | | | | **Evidence sighted** | **Comments** |
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| **1** | **2** | **3** | **4** | **5** |
| 9.1 | Do leaders demonstrate their commitment to a positive health and safety culture, including human factors (i.e. allocation of time, money, people, strategic priorities)? |  |  |  |  |  |  |  |
| 9.2 | Are key performance indicators for safety  and health included in position descriptions for leadership, senior management, and those with supervisory responsibilities? |  |  |  |  |  |  |  |
| 9.3 | Do leaders and senior managers have key  performance indicators for engaging with  workers who perform safety-critical work  activities? |  |  |  |  |  |  |  |
| 9.4 | Is learning from successful work encouraged and shared with the workforce? |  |  |  |  |  |  |  |
| 9.5 | Is the reporting of near misses, incidents and accidents without fear of retribution  actively promoted by the leadership, senior  managers and supervisors? |  |  |  |  |  |  |  |
| 9.6 | Is a ‘just culture’ applied after investigations are complete (e.g. workers are not blamed as the cause of incidents)? |  |  |  |  |  |  |  |
| 9.7 | Are workplace surveys of organisational  culture completed regularly (i.e. every  two years) and recommendations, if any,  implemented? Is feedback provided to  personnel? |  |  |  |  |  |  |  |
| 9.8 | Are reviews of health and safety  performance conducted to determine if  routine, procedural violations are minimal  and not widespread throughout workplace? |  |  |  |  |  |  |  |

# Part 10 Maintenance, inspection and testing

| **Item** | **Check** | **Level** | | | | | **Evidence sighted** | **Comments** |
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| **1** | **2** | **3** | **4** | **5** |
| 10.1 | Are leaders and senior managers  provided with training and information  on the consequences of failing to provide  necessary maintenance, inspection  and testing resources (i.e. operational  risk assessment results have been  communicated)? |  |  |  |  |  |  |  |
| 10.2 | Are maintenance activities planned  and scheduled to ensure tasks can be  completed safely and do not affect the  safety of other operational areas? |  |  |  |  |  |  |  |
| 10.3 | Are risk assessments undertaken before  high risk, new or unique, maintenance  activities commence to identify and control  safety-critical tasks to ALARP or SFARP? |  |  |  |  |  |  |  |
| 10.4 | Are compliance audits conducted on the permit system for maintenance activities  (i.e. particularly during emergency or ad  hoc critical work)? |  |  |  |  |  |  |  |
| 10.5 | Is there a process for identifying plant/  equipment that is to be isolated, including  the requirement for independent  verification to be conducted and  documented? |  |  |  |  |  |  |  |
| 10.6 | Are clear accept/reject criteria with respect  to plant condition prior to being put back  into service, or allowed to continue in  service, provided and readily available? |  |  |  |  |  |  |  |
| 10.7 | Are safety-critical communications about  maintenance activities assured (e.g. shift  handover procedure and log, adequate  coordination and tracking of maintenance  work)? |  |  |  |  |  |  |  |

# Corrective action plan

| **Actions** | **Tasks** | **Responsible person** | **Completion date** | **Review date** |
| --- | --- | --- | --- | --- |
| **Immediate** |  |  |  |  |
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| **Short-term** |  |  |  |  |
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| **Mid-term** |  |  |  |  |
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| **Long-term** |  |  |  |  |
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