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** |
| --- | --- | --- | --- | --- |
| **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** |
| --- | --- | --- | --- | --- |
| **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 desiredperformance 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 linguisticallydiverse groups, levels of literacy, visualand 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 proceduresand associated job aids (e.g. checklists,flow charts) that are clear, fit-for-purposeand cater for the operating condition (i.e.routine, safety-critical, emergency andupset conditions?) | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |

# Part 3 Training and competence

| **Item** | **Check** | **Level** | **Evidence sighted** | **Comments** |
| --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** |
| 3.1 | Are training needs analyses conductedfor safety-critical tasks which includesdifferent 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 matricesavailable which clearly identify training andcompetency requirements to carry out rolespecific activities? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 3.3 | Is training on human factors provided forpersonnel who hold safety-critical roles? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 3.4 | After training and completing anyadditional learning activities (e.g. high riskwork, confined space, crane and forkliftoperations, process plant operation),is competency independently verifiedbefore individuals are allowed to workindependently? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 3.5 | Is refresher training provided regularly (e.g.every two years and prior to tasks beingperformed) for the infrequent safety-criticaltasks (e.g. plant start-up)? This includescontractors. | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 3.6 | Is the training and competency systemregularly audited to ensure training andcompetency requirements are current andmaintained? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |

# Part 4 Staffing and workload (including supervision)

| **Item** | **Check** | **Level** | **Evidence sighted** | **Comments** |
| --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** |
| 4.1 | Are risk assessments or reviewsconducted to determine the requiredstaffing levels and mix of skills for effectiveperformance of safety-critical tasks underdifferent operating conditions (i.e. normaloperating conditions, abnormal andemergency conditions, facility changes,emergency response conditions)? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 4.2 | Are staffing levels regularly monitoredagainst operational changes (i.e. shutdown, downsizing, construction, upgrades)to ensure resourcing remains appropriatefor the effective performance of safety-critical tasks? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 4.3 | Are functional job assessments conductedfor each type of job role (e.g. office-based,field-based), which includes identifyingphysical, cognitive and emotional workdemands? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 4.4 | Are risk assessments or reviewsundertaken to ensure the span of controlof supervision is appropriate for the type oftasks being performed, and the experience,skills and knowledge of workersperforming the tasks? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 4.5 | Do supervisors have the required trainingand competencies to identify and controlhazards, and respond to emergency andrecovery 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** |
| --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** |
| 5.1 | Is there a process for managing changethat includes clear objectives, leadershipresponsibilities for senior managementand a structured procedure, including acommunication plan? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 5.2 | Does consultation occur with personnelimpacted by the change? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 5.3 | Do risk assessments consider the impactof performance-shaping factors (includingthe impact of the change process onworkers)? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 5.4 | Are training and competency requirementsreviewed as part of the management ofchange? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 5.5 | Do management of change processesidentify key trigger events that may impactthe validity of competency profiles (i.e.environmental conditions, staff resourcing,and introduction of new or modifiedactivities, positions, technologies, plant,equipment, systems, or procedures)? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 5.6 | Does the management of change process include reviewing and monitoring thechange to ensure effective performanceof associated safety-critical tasks andother procedures (i.e. maintenance andoperational work instructions)? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |

# Part 6 Safety-critical communications

| **Item** | **Check** | **Level** | **Evidence sighted** | **Comments** |
| --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** |
| 6.1 | Are there defined communicationprocesses for safety-critical tasks (e.g.permit-to-work, shift handover, controlroom to field operator, maintenancecommunications, emergency response)? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 6.2 | Is major hazard informationcommunicated 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 factorsproactively implemented (e.g. learningteams, post job debriefs, discussingperformance-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 signalsconform to ergonomic requirements? Forexample, 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 humanfactors 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’toccurred? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 7.5 | Are reviews of the current alarmmanagement system conducted andrecommendations from the review, if any,implemented? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 7.6 | Are safety-critical alarms clearlydistinguished and separately displayed? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 7.7 | Is the alarm list and required responseprocess readily available andunderstandable to the operator? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| **Work environment** |  |  |
| 7.8 | Are risk assessments of environmentalconditions (e.g. heat, noise, dust, availableworkspace, technology) conducted andrisks controlled to ALARP or SFARP? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 7.9 | Are assessments conducted to ensurelighting is appropriate for the tasks beingcarried out and directional sources oflight are controlled to ALARP or SFARP?For example, close, accurate work willrequire higher light levels. Lightingrecommendations are outlined in AS/NZS 1680: 2009. | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 7.10 | Are assessments to identify whethernoise might interfere with safety-criticalcommunications 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. rosterdesign, work demands, support, autonomy)applied to the design of jobs? |  |  |  |  |  |  |  |
| 7.12 | Are risk assessments of workplacepsychosocial hazards conducted and riskscontrolled to ALARP or SFARP? |  |  |  |  |  |  |  |

# Part 8 Fitness for work

| **Item** | **Check** | **Level** | **Evidence sighted** | **Comments** |
| --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** |
| 8.1 | Is there a fitness for work (FFW) policycovering fatigue, medical fitness (i.e.physical health and functional capacity),mental health and wellbeing, and alcoholand other drug use? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 8.2 | Does the FFW policy or procedureacknowledge that both work-related andpersonal factors contribute to mentalhealth and wellbeing? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 8.3 | Is there an FFW procedure that outlinesthe process for assessment/evaluationand controls (i.e. removal to a safe workarea, evacuation for medical evaluation,and options for an escorted evacuationfrom site to a safe work area or medicalevaluation)? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 8.4 | Is there a policy disallowing alcoholconsumption in the workplace? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 8.5 | Does the workplace culture discourage theexcessive consumption of alcohol at work-related social events and in work providedcamp and village accommodation? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 8.6 | Is there a no tolerance approach to illegaldrugs? What strategies are implemented? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 8.7 | Is training provided to those withmanagement and supervisoryresponsibilities outlined in the FFW policyor procedure on the types of factorsaffecting FFW, assessment methods andprocess? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 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 topersonnel on the FFW policy, procedureand conditions that may impact their FFW? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |

# Part 9 Health and safety culture

| **Item** | **Check** | **Level** | **Evidence sighted** | **Comments** |
| --- | --- | --- | --- | --- |
| **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 safetyand health included in position descriptions for leadership, senior management, and those with supervisory responsibilities? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 9.3 | Do leaders and senior managers have keyperformance indicators for engaging withworkers who perform safety-critical workactivities? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 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 retributionactively promoted by the leadership, seniormanagers 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 organisationalculture completed regularly (i.e. everytwo years) and recommendations, if any,implemented? Is feedback provided topersonnel? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 9.8 | Are reviews of health and safetyperformance conducted to determine ifroutine, procedural violations are minimaland not widespread throughout workplace? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |

# Part 10 Maintenance, inspection and testing

| **Item** | **Check** | **Level** | **Evidence sighted** | **Comments** |
| --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** |
| 10.1 | Are leaders and senior managersprovided with training and informationon the consequences of failing to providenecessary maintenance, inspectionand testing resources (i.e. operationalrisk assessment results have beencommunicated)? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 10.2 | Are maintenance activities plannedand scheduled to ensure tasks can becompleted safely and do not affect thesafety of other operational areas? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 10.3 | Are risk assessments undertaken beforehigh risk, new or unique, maintenanceactivities commence to identify and controlsafety-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 adhoc critical work)? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 10.5 | Is there a process for identifying plant/equipment that is to be isolated, includingthe requirement for independentverification to be conducted anddocumented? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 10.6 | Are clear accept/reject criteria with respectto plant condition prior to being put backinto service, or allowed to continue inservice, provided and readily available? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |
| 10.7 | Are safety-critical communications aboutmaintenance activities assured (e.g. shifthandover procedure and log, adequatecoordination and tracking of maintenancework)? | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |  |  |

# 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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