

**U.S. Nuclear Regulatory Commission**  
**Human Factors Information System (HFIS) Codes**

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## Inspection Report Specific Codes

### Inspection Procedure Type

The following are codes for the type of inspection:

**B:** Baseline - the minimum level of inspection conducted at all power reactor facilities, regardless of performance.

**S:** Supplemental - inspections of performance issues beyond the baseline program. The increased inspection effort is based on criteria specified in the assessment program to address declining licensee performance.

**P:** Special/infrequently performed/event followup - inspections implemented infrequently for special situations. This category includes event response inspections, such as incident investigation team (IIT) and augmented inspection team (AIT).

### Page Number

The page number where the human performance issue is documented will be recorded with each "hit."

### Risk Significance

Human performance issues documented in inspection reports can come from findings, violations, or other areas of the report (e.g., observations). Findings documented in inspection report represent a deficiency in a licensee's performance. Findings can be assigned colors based on risk significance or can be outside the scope of the ROP (i.e., traditional enforcement). The assigned colors are, in order of risk significance, green, white, yellow, red. The codes for risk significance are:

**G** - Green

**W** - White

**Y** - Yellow

**R** - Red

**U** - Unresolved item (URI) - finding or risk significance determination has not been completed

**V** - Violation but no color (cited or non-cited)

**N** - Not associated with a finding or violation (e.g., observation)

Items coded as "U" must be tracked using their assigned URI number. Once resolved and the significance determined, the "U" must be changed to the appropriate risk significance code.

## **Cross-cutting issues**

Cross-cutting issues generally manifest themselves as the root causes of performance problems and help in the development of common performance themes when inspection findings are reviewed. A finding can contain more than one cross-cutting aspect. The determination of cross-cutting aspect is described in the finding writeup. The cross-cutting issues are:

**H:** Human performance - the role of plant personnel in plant operations.

**P:** Problem identification and resolution (PI&R) - detecting and correcting problems in a manner that limits the risk to members of the public.

**S:** Safety conscious work environment (SCWE) - an environment in which employees feel free to raise safety concerns, both to their management and to the NRC, without fear of retaliation, and where such concerns are promptly reviewed, given the proper priority based on their potential safety significance, and appropriately resolved with timely feedback to employees.

**N:** No cross-cutting issue

## LER Specific Code

### Page Number

The page number where the human performance issue is documented will be recorded with each "hit."

### Accident Sequence Precursor (ASP)

For events that are identified as potential Accident Sequence Precursors (ASP), the NRC staff calculates the probability of that event leading to a core damage state. Depending on the type of event, these calculations can either be conditional core damage probability (CCDP) or increase in core damage probability ( $\Delta$ CDP). These values are reported in the annual Office of Nuclear Regulatory Research Commission Paper, "Status of the Accident Sequence Precursor (ASP) Program and the Development of Standardized Plant Analysis Risk (SPAR) Models." After the status report is released each year, the CCDP or  $\Delta$ CDP value should be categorized for all LERs that are identified as potential ASP events by using the following safety significance levels:

H - High: value  $\geq 1E-4$

S - Substantial:  $1E-5 \leq$  value  $< 1E-4$

M - Low to Moderate:  $1E-6 \leq$  value  $< 1E-5$

L - Very low: value  $< 1E-6$

N - Non ASP

General Codes

| <b>Categories</b>                           | <b>Areas</b>  | <b>Details</b>   |
|---|---|--|
| <b>T</b> Training                           | <b>T1</b> Initial<br><b>T2</b> Continuing/requal<br><b>T3</b> On-the-job training   | <b>100</b> Training LTA<br><b>101</b> Training process problem<br><b>102</b> Individual knowledge LTA  |
|   | <b>T4</b> Simulator training  | <b>103</b> Simulator training LTA  |
| <b>P</b> Procedures and Reference Documents | <b>P1</b> General operating<br><b>P2</b> Abnormal/off normal/ alarm condition<br><b>P3</b> Emergency (EOPs & ERPs)<br><b>P4</b> Reactivity control<br><b>P5</b> Maintenance/ modification<br><b>P6</b> Surveillance/ calibration/test<br><b>P7</b> Chemical/ radiochemical<br><b>P8</b> Refueling<br><b>P9</b> Administrative<br><b>P10</b> Licensing Documents<br><b>P11</b> Special<br><b>P12</b> Other | <b>110</b> No procedure/reference documents<br><b>111</b> Procedure/reference document technical content LTA<br><b>112</b> Procedure/reference document contains human factors deficiencies<br><b>113</b> Procedure/reference document development and maintenance LTA |

| <b>Categories</b>                              | <b>Areas</b>   | <b>Details</b>   |
|--|--|--|
| <b>F</b> Fitness for Duty                      | <b>F1</b> Drugs<br><b>F2</b> Alcohol<br><b>F3</b> Mental/emotional<br><b>F4</b> Fatigue<br><b>F5</b> Unknown/other | <b>120</b> Testing LTA<br><b>121</b> Assessment LTA<br><b>122</b> Behavioral observation LTA<br><b>123</b> Self-declaration LTA<br><b>124</b> Training missing/LTA<br><b>125</b> Work hour control LTA<br><b>126</b> Task design/work environment LTA<br><b>127</b> Circadian factors/individual differences<br><b>128</b> Non-compliance<br><b>129</b> Impairment |
| <b>O</b> Oversight                             | <b>O1</b> Oversight  | <b>130</b> Inadequate supervision/command and control<br><b>131</b> Management expectations or directions LTA  |
| <b>R</b> Problem Identification and Resolution | <b>R1</b> Problem identification   | <b>140</b> Problem not completely or accurately identified<br><b>141</b> Problem not properly classified or prioritized<br><b>142</b> Operating experience (OE) review LTA<br><b>143</b> Tracking/trending LTA<br><b>144</b> Audit/self-assessment/effectiveness review LTA  |
|  | <b>R2</b> Problem evaluation   | <b>145</b> Causal development LTA<br><b>146</b> Evaluation LTA   |

| <b>Categories</b>                                       | <b>Areas</b>                                | <b>Details</b>  |
|---|---|---|
|   | <b>R3</b> Problem resolution                | <b>147</b> Individual corrective action LTA<br><b>148</b> Action not yet started or untimely<br><b>149</b> No action planned  |
|   | <b>R4</b> Corrective action program         | <b>150</b> Programmatic deficiency  |
|   | <b>R5</b> Safety conscious work environment | <b>151</b> Willingness to raise concerns LTA<br><b>152</b> Preventing and detecting retaliation LTA   |
| <b>C</b> Communication                                  | <b>C1</b> Oral<br><b>C2</b> Written         | <b>160</b> No communication/information not communicated<br><b>161</b> Communication LTA<br><b>162</b> Communication equipment LTA  |
| <b>H</b> Human - System Interface (HSI) and Environment | <b>H1</b> HSI components/equipment          | <b>170</b> HSI or availability/quality LTA  |
|   | <b>H2</b> Simulator                         | <b>171</b> Simulator fidelity LTA<br><b>172</b> Simulator use LTA   |
|   | <b>H3</b> Physical work environment         | <b>173</b> Physical conditions LTA  |
| <b>W</b> Work Planning and Practices                    | <b>W1</b> Work planning and coordination    | <b>180</b> Scheduling and planning LTA<br><b>181</b> Inadequate staffing/task allocation<br><b>182</b> Work package quality LTA<br><b>183</b> Pre-job activities LTA<br><b>184</b> Tag outs LTA |

| Categories | Areas                         | Details   |
|------------|-------------------------------|---|
|            | <b>W2</b> Work practices      | <b>185</b> Procedural adherence LTA<br><b>186</b> Failure to take action/meet requirements<br><b>187</b> Action implementation LTA<br><b>188</b> Work practice or craft skill LTA<br><b>189</b> Recognition of adverse condition/questioning attitude LTA<br><b>190</b> Failure to stop work/non-conservative decisionmaking<br><b>191</b> Team interactions LTA<br><b>192</b> Work untimely<br><b>193</b> Non-conservative action<br><b>194</b> Housekeeping LTA<br><b>195</b> Logkeeping or log review LTA<br><b>196</b> Independent verification/plant tours LTA |
|            | <b>W3</b> Awareness/attention | <b>197</b> Self-check LTA<br><b>198</b> Worker distracted/interrupted   |

## Area and Detail Definitions

### Training: Area Definitions

|                                      |  |
|--------------------------------------|--|
| <b>T1</b> Initial                    | if training is basic training leading up to initial qualifications   |
| <b>T2</b> Continuing/requalification | if training presents advanced topics or refresher training on basic topics                                     |
| <b>T3</b> On-the-job training        | if training is job performance oriented, leading to task qualification, and/or conducted in a work environment |
| <b>T4</b> Simulator training         | if training is conducted using a control room simulator  |

### Training: Details Definitions

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| <b>100</b> Training less than adequate             | if the incident/condition is due to not providing any training on a specific topic, or training is incomplete/incorrect  |
| <b>101</b> Training process problem                | if the incident/condition is due to a break down in the systems approach to training (SAT) (e.g., inadequate job or task analysis, task qualification process was not sufficient to ensure that the worker could successfully perform the task in actual job conditions, inadequate program evaluation or feedback, or failure to keep lesson materials current) |
| <b>102</b> Individual knowledge less than adequate | if the worker has received the appropriate training but fails to apply or inadequately applies the relevant knowledge  |

### Training: Details Definitions - Simulator Training

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|---|---|
| <p><b>103</b> Simulator training less than adequate</p> | <p>if the simulator model does not provide a means of simulating a failure of a particular device, mimic the actual system response, or match actual plant system response during training use, or simulator is not used for training when it should be</p> |
|---|---|

### Procedures and Reference Documents: Area Definitions

|   |  |
|---|--|
| <p><b>P1</b> General operating</p>                    | <p>procedures related to all phases of normal plant operation (including drawings)</p>   |
| <p><b>P2</b> Abnormal/off normal/alarm conditions</p> | <p>all Abnormal Operating Procedure (AOP) or Alarm Response Procedure (ARP)</p>  |
| <p><b>P3</b> Emergency (EOPs / ERPs)</p>              | <p>all Emergency Operating Procedures (EOP) and Emergency Response Procedures (ERP)</p>  |
| <p><b>P4</b> Reactivity control</p>                   | <p>procedures/documents related to altering the core reactivity (movement between modes), such as general plant startup and shutdown, and includes any governing reactor engineering or nuclear engineering procedure used by cognizant plant staff overseeing the operators as they alter core reactivity</p> |
| <p><b>P5</b> Maintenance/modification</p>             | <p>procedures/documents related to corrective and preventive maintenance activities, and also includes vendor manuals</p>  |
| <p><b>P6</b> Surveillance/test/calibration</p>        | <p>procedures/documents governing activities related to testing of equipment to ensure operability during normal operation or after maintenance, calibration, troubleshooting</p>  |

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|----------------------------------|--|
| <b>P7</b> Chemical/radiochemical | procedures/documents related to acquiring current information on radionuclide or water chemistry problems  |
| <b>P8</b> Refueling              | procedures/documents related to movement of fuel or control rods   |
| <b>P9</b> Administrative         | procedures, checklists, etc. related to general activities such as tagging, scaffolding, housekeeping, configuration control                       |
| <b>P10</b> Licensing documents   | documents detailing specific license requirements such as Technical Specifications, Final Safety Analysis Report (FSAR), or design basis documents |
| <b>P11</b> Special               | procedures/documents related to unique situations such as once in a plant life test and installation of a unique modification                      |
| <b>P12</b> Other                 | procedure/documents which do not fit into any of the other area definitions  |

### Procedures and Reference Documents: Details Definitions

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| <b>110</b> No procedure/reference document   | if a procedure/document does not exist  |
| <b>111</b> Procedure/reference document technical content is less than adequate        | if a procedure/document exists but does not provide sufficient guidance for the worker to avoid error, or the procedure/document contains incorrect information (e.g., missing step)                            |
| <b>112</b> Procedure/reference document contains human factors deficiencies            | if the procedure/document content is correct but the human factors design makes it difficult for the worker to follow the guidance, or the worker misinterprets information contained in the procedure/document |
| <b>113</b> Procedure/reference document development and maintenance less than adequate | if the procedure/document was developed using inadequate analysis, has not been updated in either the original or in a specific copy, or its physical condition has not been maintained                         |

### Fitness for Duty: Area Definitions

|                            |  |
|----------------------------|--|
| <b>F1</b> Drugs            | if the incident/condition is related to the use, sale, or possession of illegal drugs, or from the use of prescription or over-the-counter substances  |
| <b>F2</b> Alcohol          | if the incident/condition is related to the use, sale, or possession of alcohol  |
| <b>F3</b> Mental/emotional | if the incident/condition is related to impairment from a transient personal problem (e.g., divorce or illness or death of a family member), or a chronic mental or emotional challenge (e.g., depression) |
| <b>F4</b> Fatigue          | if there is impaired performance due to fatigue/alertness factors, or there is a problem in the management of worker fatigue   |
| <b>F5</b> Unknown/other    | If the incident/condition is related to an impairment where the specific nature of the fitness for duty factor is not described or is not listed in this section   |

### Fitness for Duty: Detail Definitions - Fitness for Duty

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| <b>120</b> Testing less than adequate                | if the incident/condition is related to a lack of or weakness(es) in the drug and alcohol testing program   |
| <b>121</b> Assessment less than adequate             | if the incident/condition is related to a missing or ineffective fatigue assessment   |
| <b>122</b> Behavioral observation less than adequate | if the incident/condition is related to a lack of or ineffective observation of workers subject to a fitness for duty program for behavioral indications that an individual may not be fit for duty |
| <b>123</b> Self-declaration less than adequate       | if incident/condition is related to the worker not making or ineffectively making a statement to a supervisor that he/she is not fit for duty   |

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|--|---|
| <b>124</b> Training less than adequate                     | if the incident/condition is related to weakness(es) in FFD training or a failure to receive training   |
| <b>125</b> Work hour control less than adequate            | if the incident/condition is related to ineffective design of routine work schedules and control of unscheduled work hours (e.g., overtime)   |
| <b>126</b> Task design/work environment less than adequate | if task factors (e.g., repetition, cognitive stimulation, automation) or environmental factors (e.g., heat, noise) are not effectively controlled to maintain worker alertness  |
| <b>127</b> Circadian factors/individual differences        | if there is performance impairment related to naturally occurring variations in alertness repeating on an approximate 24 hour cycle or related to differences among individuals (including sleep disorders) and individual lifestyles affecting ability to remain alert or tolerate shiftwork   |
| <b>128</b> Non-compliance                                  | if the incident/condition does not meet relevant standards, procedures, or regulatory requirements related to fitness for duty  |
| <b>129</b> Impairment                                      | if the individual(s) ability to safely and competently perform duties is impaired or is questionable and coincides with conditions that contribute to fitness for duty problems (e.g., fatigue: extended work hours, decreased rest, shift transitions), statement of being unfit for duty, or indication that the individual was unfit (e.g., sleeping, not fully alert/attentive) |

### Oversight: Area Definitions

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|---------------------|---|
| <b>O1</b> Oversight | if the incident/condition is due to management or supervision of work activity or workers |
|---------------------|---|

### Oversight: Details Definitions

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| <b>130</b> Inadequate supervision/command and control    | if the incident/condition is due to a lack of or less than adequate supervision or command and control of work activity implementation  |
| <b>131</b> Expectations or directions less than adequate | if specific expectations (e.g., from manager, supervisor, etc.) are unavailable, unclear, incorrect, or places emphasis on meeting schedule in spite of problems, excessive work load, or job demands, or workers feel rushed due to perceived direction (e.g., from supervisors, management, etc.) |

### Problem Identification and Resolution: Area Definitions

|   |   |
|---|---|
| <b>R1</b> Problem identification            | if incident/condition is related to the identification of an issue or deficiency                                |
| <b>R2</b> Problem evaluation                | if incident/condition is related to the evaluation (e.g., apparent cause, root cause) of an issue or deficiency |
| <b>R3</b> Problem resolution                | if incident/condition is related to the corrective actions to address an issue or deficiency                    |
| <b>R4</b> Corrective action program         | if incident/condition is related to the effectiveness of the corrective action program at a programmatic level  |
| <b>R5</b> Safety conscious work environment | if incident/condition is related to employees not feeling free to raise safety concerns                         |

### Problem Identification and Resolution: Detail Definitions - Problem Identification

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| <b>140</b> Problem not completely or accurately identified               | if the incident/condition is not completely or accurately identified at an appropriate threshold, in a timely matter, and entered correctly into the corrective action program                            |
| <b>141</b> Problem not properly classified or prioritized                | if the incident/condition is not appropriately classified to receive the proper level of evaluation (e.g., apparent cause or root cause), or is not prioritized commensurate with its safety significance |
| <b>142</b> Operating experience (OE) review less than adequate           | if the incident/condition is related to failure to consider the implications of previous plant or industry OE (including NRC communications)  |
| <b>143</b> Tracking/trending less than adequate                          | if the tracking of problems to identify trends that might indicate a more significant safety issue is not conducted or is ineffective   |
| <b>144</b> Audit/self-assessment/effectiveness review less than adequate | if the number or quality of audits, self-assessments, or effectiveness review is not sufficient to identify problems  |

**Problem Identification and Resolution: Detail Definitions - Problem Evaluation**

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|--|---|
| <b>145</b> Causal development less than adequate | if the identification of causal factors (e.g., the apparent or root cause) is not appropriately focused or of the right scope to correct the problem      |
| <b>146</b> Evaluation less than adequate         | if the problem evaluation does not give appropriate consideration to the extent of condition, generic implications, common cause, or previous occurrences |

### Problem Identification and Resolution: Detail Definitions - Problem Resolution

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| <b>147</b> Individual corrective action less than adequate | if a specific fix was not completed, or if completed, was ineffective in fixing the incident/condition and/or failed to prevent recurrence |
| <b>148</b> Action not yet started or untimely              | if a specific corrective action was previously identified, but has not been started or was not implemented on a timely basis               |
| <b>149</b> No action planned                               | if a previous occurrence did not identify any corrective actions where there should have been  |

### Problem Identification and Resolution: Detail Definitions - Corrective Action Program

|                                    |   |
|------------------------------------|---|
| <b>150</b> Programmatic deficiency | if the program for identifying and correcting problems has not been effective in addressing problems or preventing recurrences of problems due to programmatic or organizational weaknesses |
|------------------------------------|---|

### Problem Identification and Resolution: Detail Definitions - Safety Conscious Work Environment

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|--|---|
| <b>151</b> Willingness to raise concerns less than adequate        | if there is indication of reluctance to raise safety concerns   |
| <b>152</b> Preventing and detecting retaliation less than adequate | if the incident/condition is related to ineffective detection and prevention of retaliation or perceptions of retaliation for raising safety concerns |

### Communication: Area Definitions

|                   |   |
|-------------------|---|
| <b>C1</b> Oral    | if the incident/condition is related to instructions or information transmitted orally  |
| <b>C2</b> Written | if the incident/condition is related to instructions or information other than that in procedures which is transmitted in writing (e.g., night orders, memos, operator aids for operation of equipment) |

### Communication: Details Definitions

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|--|---|
| <b>160</b> No Communication/information not communicated | if information is not shared, not found, not used, or sent to the wrong place or person   |
| <b>161</b> Communication less than adequate              | if the incident/condition is related to any of the following:<br>-information is missing key elements (e.g., not specifying a particular train), is incorrect (e.g., misstating information such as providing the wrong identification number for a piece of equipment), or is confusing<br>-the information is correctly stated or written but is not understood or is misinterpreted<br>-the correct information is received late (e.g., starting a test before informing the control room)<br>-the groups fail to cross check the information being communicated |

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| <b>162</b> Communication equipment less than adequate | if no equipment is available, or if available, equipment does not allow for clear communication in the environment in which it is being used (e.g., too much static, insufficient number of radio frequencies to support the amount of work, failure to make the signal stand out from the background noise) |
|---|--|

## Human-System Interface: Area Definitions

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|--|--|
| <p><b>H1</b> Human-system interface (HSI) components/equipment</p> | <p>if the incident/condition is related to any of the following:</p> <ul style="list-style-type: none"> <li>-alarms/annunciators (used to provide audible or visual notifications or indications)</li> <li>-controls and input devices (either analog or digital, used to change the operating characteristics of equipment)</li> <li>-displays (not the panel; the presentation of information that is used for monitoring or controlling equipment)</li> <li>-panel or workstation layout (the physical arrangement of devices, displays, alarms and equipment as they relate to each other or to the worker)</li> <li>-labels (placard or printed information designed to provide identifying information)</li> <li>-pumps, valves, electrical devices, or other devices that are operated or needed for the performance of a task</li> </ul> |
| <p><b>H2</b> Simulator</p>   | <p>if the incident/condition involves the simulator for non-training purposes</p>  |
| <p><b>H3</b> Physical work environment</p>                         | <p>if the physical work conditions have an adverse impact on the performance of tasks (e.g., temperature and humidity (indoor), lighting, noise levels, radiation levels, work area layout or accessibility, and postings)</p>   |

## Human-System Interface: Details Definitions - HSI Components

|  |  |
|--|--|
| <p><b>170</b> HSI or information availability/quality less than adequate</p> | <p>if the incident/condition is related to any of the following:</p> <ul style="list-style-type: none"> <li>-information contained on or location of labels is confusing or misleading</li> <li>-information and identifiability with associated alarms, controls, or displays is</li> </ul> |
|--|--|

**Human-System Interface: Details Definitions - Simulator**

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|---|---|
| <p><b>171</b> Simulator fidelity less than adequate</p> | <p>if the simulator model does not provide a means of simulating a failure of a particular device, does not mimic the actual system response, or does not match actual plant system response, during uses other than training</p> |
| <p><b>172</b> Simulator use less than adequate</p>      | <p>if the simulator should have been used but is not, or it is used for inappropriate purposes (e.g., using the simulator to collect information on plant response when calculations should have been performed)</p>              |

**Human-System Interface: Details Definitions - Physical Work Environment**

|  |   |
|--|---|
| <p><b>173</b> Physical conditions less than adequate</p> | <p>if the incident/condition is related to any of the following physical work conditions (not related to fatigue or alertness):</p> <ul style="list-style-type: none"> <li>-extremes of either hot or cold temperature or other extreme weather conditions</li> <li>-inadequate level of lighting, too much glare, or wrong color lighting</li> <li>-distracting noise level</li> <li>-work practices required because of the radiation level, or performance of the task was made more difficult by requirements for worker to wear protective clothing</li> <li>-limited access to equipment or controls</li> <li>-inappropriate work area size</li> <li>-postings contain limited information, are in inadequate/inappropriate locations, or are untimely, out-of-date, or uncontrolled</li> </ul> |
|--|---|

**Work Planning and Implementation: Area Definitions**

|  |   |
|--|---|
| <b>W1</b> Work planning and coordination | if the incident/condition is related to the scheduling, allocation, staffing, or planning of work tasks   |
| <b>W2</b> Conduct of work                | if the incident/condition is due to work practices that are not consistent with the type, difficulty, or importance/risk-significance of the task |
| <b>W3</b> Awareness/attention            | if the incident/condition is due to a lack of awareness, attention or checking  |

### Work Planning and Implementation: Detail Definitions - Work Planning and Coordination

|   |   |
|---|---|
| <b>180</b> Scheduling and planning less than adequate             | if the incident/condition is due to a lack of scheduling of work, key aspects of the job not being considered, or insufficient time available to complete the task  |
| <b>181</b> Inadequate staffing/task allocation less than adequate | if the incident/condition is due to any of the following:<br>-an insufficient number of workers to complete all the tasks needed<br>-the total number of workers is adequate, but the way in which work is distributed is uneven, overloaded, or require too many actions at one time or too much information to be processed concurrently<br>-selection of a worker who is not qualified to perform the task because of inadequate training or due to qualification information not being up-to-date or readily available<br>-inappropriate use of operator workarounds, or their cumulative effect not appropriately considered |
| <b>182</b> Work package quality less than adequate                | if the work package is missing information, or the information is incorrect or insufficient to ensure successful work   |
| <b>183</b> Pre-job activities less than adequate                  | if the pre-job activities (e.g., briefing, walk through, shift turnover, or preparation activity) were missing or insufficiently covered information, or  |

|                     |  |
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|                     | conditions were not verified prior to conducting the activities  |
| <b>184</b> Tag outs | if the incident/condition is due to missing or incorrect tagging |

### Work Planning and Implementation: Details Definitions - Conduct of Work

|   |   |
|---|---|
| <b>185</b> Procedural adherence less than adequate                                  | if the appropriate procedure, instruction, drawing, etc., is not followed or is followed inadequately (if done knowingly, see code 193)   |
| <b>186</b> Failure to take action/meet requirements                                 | if the appropriate action to address the situation/circumstances or to meet requirements is not taken or is taken inadequately (e.g., meet surveillance requirements, notify NRC) |
| <b>187</b> Action implementation less than adequate                                 | if implementation of an action (e.g., physical such as manipulations, or mental such as calculations/analyses) is performed incorrectly or inadequately                           |
| <b>188</b> Work practice or craft skill less than adequate                          | if the skill of the craft activities are not performed consistent with management expectations, safety significance of activity, or industry standards                            |
| <b>189</b> Recognition of adverse condition/questioning attitude less than adequate | if unfavorable/uncertain conditions/situation is not recognized in a timely manner  |
| <b>190</b> Failure to stop work/non-conservative decision-making                    | if personnel fail to stop work or establish appropriate controls when presented with unfavorable or uncertain work conditions   |
| <b>191</b> Team interactions less than adequate                                     | if there is a lack of or inadequate inter/intra-group coordination  |
| <b>192</b> Work untimely  | if work is done before authorized, delayed with or without reason, or performed out of sequence   |
| <b>193</b> Non-conservative action  | if the worker <u>knowingly</u> fails to follow a procedure or supervisory direction or takes a non-approved action  |

|  |   |
|--|---|
| <b>194</b> Housekeeping less than adequate                         | if the work areas have unusual amounts of dirt, or tools, materials, and equipment are not properly cared for or stored   |
| <b>195</b> Logkeeping or log review less than adequate             | if log entries are missing, incomplete or untimely  |
| <b>196</b> Independent verification/plant tours less than adequate | if personnel fail to identify errors through independent verification (e.g., peer/second check), or verifications are performed inconsistent with management expectations or industry standards |

**Work Planning and Implementation: Details Definitions - Awareness and Attention**

|   |  |
|---|--|
| <b>197</b> Self-check less than adequate                | if a worker fails to adequately self-check before, during, or after performing task (e.g., Stop, Think, Act, Review)   |
| <b>198</b> Worker distracted/interrupted/monitoring LTA | includes incidents/conditions due to failing to maintain situational awareness or vigilance, conducting infrequent or ineffective control board monitoring (e.g., status monitoring), or being distracted or interrupted from assigned tasks |

**Work Type Definitions**

These codes describe the type of activity being performed by workers at the time the human performance incidents/condition occurred.

**O** - Operations - in the control room - control room activities by operations department personnel, including monitoring of displays and phone notification to NRC

**B** - Operations - balance of plant - any work performed in the field by a member of the operations department - either licensed or non-licensed

**M** - Maintenance/repair - any work performed by either electrical, mechanical, or I&C personnel related to maintenance or repair of equipment

**T** - Testing - any work performed, regardless of department, for the purpose of testing a system or component

**S** - Surveillance - any work performed, regardless of department, that is specifically related to ensuring or determining operability - usually related to Technical Specifications

**C** - Calibration - any work, usually performed by I&C technicians, related to ensuring that the data output of a measuring, metering, or detecting device is accurate

**F** - Modification - any work by any department specifically related to the installation of a modification to the plant

**R** - Refueling - any work by any department specifically related to the movement of fuel and any other activities occurring on the refueling floor

**V** - Troubleshooting - any work by any department specifically related to determining the cause of an equipment problem

**H** - Radiological protection - any work related to performing contamination surveys, decontamination activities, source control, or radiation worker activities

**G** - Design - any work done by engineering in their role as design or system engineers, (e.g., calculations or analyses)

**P - Procedure development** - any work by any department related to the development of guidance documents including procedures, directives or reference documents, tests, and calculations

**Q - Fire protection** - any work related to stationary fire watches or fire watch rounds, includes fire brigade drills

**A - Administrative** - activities related to material procurement and distribution, manpower planning, staffing, work planning and scheduling, reporting or documentation (paper LERs), or log keeping

**D - Drills** - any activities related to the conduct of emergency drills or emergency planning

**N - Training** - any activities related to the training or qualification of personnel, including classroom as well as on-the-job training activities

**W - Assessment** - any type of assessment or evaluation activities, including casual analyses, corrective action program evaluations, self-assessments, Technical Specifications reviews, safety reviews (including industrial safety), and special reviews

**Y - Shipping/transportation** - any activities related to the shipping, transportation, or receiving of nuclear and/or radioactive materials (e.g., fuel)

**X - Site-wide**- any activities that are related to or affect all work groups on site

**Z - Other/unknown** - any specifically identified activity that is not covered in the other definitions, or any activity not described in sufficient detail to assign to another work type

### **Personnel Department Definitions**

These codes describe the work departments of the individuals involved in the human performance incident/condition.

**O - Operations:** all licensed operators including reactor operator (RO) and senior reactor operator (SRO), regardless of position. This category also includes system specialists (SS), shift technical advisor (STA), non-licensed operators, rad-waste operators, auxiliary operators, plant equipment operators, fire department work planning, outage planning, and project management group

**I - I & C:** includes technicians referred to by this name; may also include those titled maintenance technicians or instrument technicians. Tasks are usually associated with conducting surveillance or calibrating and functionally testing equipment

**E - Electrical:** includes electricians and electrical maintenance personnel

**M - Mechanical:** includes mechanics and mechanical maintenance personnel

**C - Chemistry:** includes chemistry and radio chemistry technicians

**H - Health physics:** includes health physics and radiation protection technicians and personnel

**G - Engineering:** includes all types of engineers (e.g., design, plant support, system engineers)

**D - Emergency Planning:** includes all personnel responsible for conduct of drills or other emergency planning activities

**T - Training:** includes all training personnel, including on-the-job trainers

**Q - Quality assurance/oversight:** includes all those performing QA/QC or nuclear oversight roles

**F - Fuel handling:** includes all personnel performing fuel inspection activities or moving materials in the fuel pool

**P - Procedure writers:** includes all personnel with specific responsibility for developing or maintaining the content of procedures and other reference documents (process focus)

**W - Work control/outage planning/scheduling:** includes all individuals working in the work center or for a specific department with work planning or work scheduling responsibilities

**A - Administrative support:** includes all those responsible for maintaining files, records or other documentation

**B - Management:** used when management is noted as the primary cause of an incident/condition

**L - Licensing/regulatory affairs:** includes all those responsible for interfacing and communicating with the NRC (tasks include event reporting, document submission, etc.)

**S - Specialized task force:** includes groups of personnel from multiple departments that have been brought together to perform a specialized task over a specific period of time (e.g., root cause analyses, corrective action reviews, self-assessments, vendor reviews, safety reviews, operating experience reviews, "action plan" activities, industrial hygiene reviews, etc.)

**V - Fitness for duty:** includes personnel involved in the fitness for duty program (e.g., program manager, specimen collectors, medical review officer, substance abuse expert, testing facility personnel)

**Y - Shipping/transportation** - includes personnel responsible for the shipping, transportation, or receiving of nuclear and/or radioactive materials (e.g., fuel)

**X - Site-wide** - used when all work groups on site are involved or affected

**Z - Other/unknown:** used when a specific group is named but not specifically noted in the coding list, or the work group cannot be determined based on the information contained in the inspection report or LER

### **Personnel Level Definitions**

**M** - **Manager**- all management levels above the first line supervisor

**S** - **Supervisor** - the first-line supervisor or foreman

**N** - **Non-supervisory/technical** - those reporting to first-line supervisor

**U** - **Unknown** - used anytime it is not possible to determine the organizational level of the worker

### **Personnel License Definitions**

**Yes** - if the worker holds a reactor operator (SRO or RO) license

**No** - if the worker does not hold an SRO or RO license

**Unknown** - if it is not possible to determine whether or not the worker holds a license

### **Personnel Contractor Definitions**

**Yes** - if the worker is a contractor (includes vendors)

**No** - if the worker is not a contractor

**Unknown** - if it is not possible to determine whether or not the worker is a contractor

## Acronyms

AIT: Augmented inspection team  
AO: Auxiliary operator  
AOP: Abnormal operating procedure  
ASP: Accident sequence precursor  
CCDP: Conditional core damage probability  
CDP: Core damage probability  
CRT: Cathode ray tube  
EO: Emergency operator  
EOP: Emergency operating procedure  
ERP: Emergency response procedure  
FFD: Fitness for duty  
FSAR: Final safety analysis report  
HP: Health physics  
HSI: Human system interface  
I&C: Instrumentation & control  
IFI: Inspector followup item  
IIT: Incident investigation team  
LER: Licensee event report  
LTA: Less than adequate  
OE: Operating experience  
OJT: On the job training  
QA/QC: Quality assurance/control  
RES: Office of Research  
RO: Reactor operator  
ROP: Reactor Oversight Process  
RP: Radiation protection  
SAT: Systems approach to training  
SRO: Senior reactor operator  
SS: Systems specialist  
STA: Shift technical advisor  
URI: Unresolved item