

# 3 **Employee Reporting of Unsafe or** 4 **Unhealthful Working Conditions**

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6  
7 NIST S 7101.02

8 Document Approval Date: 01/05/2021

9 Effective Date: 04/01/2015  
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11

## 12 **1. PURPOSE**

13 a. The purpose of this suborder is to establish a formal mechanism to assure prompt analysis  
14 and response to employee reports of perceived unsafe or unhealthful working conditions  
15 (UWCs), i.e., of conditions or practices, in any NIST workplace, that an employee believes  
16 may have a direct or immediate impact on safety or health. The formal mechanism  
17 comprises:

18  
19 (1) Employee reporting of perceived UWCs to the Chief Safety Officer (CSO);  
20

21 (2) Inspections of reported UWCs by the Office of Safety, Health, and Environment (OSHE);  
22

23 (3) The identification and implementation of corrective actions by the responsible  
24 Organizational Units (OUs), as necessary; and  
25

26 (4) Notifications to OSHE and the reporting employees when corrective actions have been  
27 completed.  
28

29 b. This suborder also outlines the process by which employees and management should abate  
30 perceived UWCs through direct employee or management action. **Before reporting UWCs**  
31 **to the CSO, employees should, whenever possible, abate the UWCs themselves or work**  
32 **with their management, OU/division safety personnel, OSHE, or others to abate the**  
33 **UWCs, as this will generally result in prompt analysis and abatement of UWCs.** See  
34 Section 9a and Appendix A, Flow Chart for Employee/Management Actions in Response to  
35 Perceived UWCs.  
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37  
38

39 **2. BACKGROUND**

- 40 a. [NIST P 710](#) articulates NIST’s commitment to make occupational safety and health an  
41 integral core value and vital part of the NIST culture by, in part, fostering a work  
42 environment in which employees are encouraged to report and raise safety and health issues  
43 without fear of reprisal.  
44
- 45 b. NIST must meet the requirements of 29 Code of Federal Regulations (CFR) 1960.28,  
46 Employee Reports of Unsafe or Unhealthful Working Conditions, which states that  
47 employees have the right and are encouraged to report UWCs to an agency safety and health  
48 official to request inspections of those conditions.<sup>1</sup> Implementation of this suborder through  
49 the requirements in Section 6 and the roles and responsibilities in Section 9 fulfills those  
50 requirements.  
51
- 52 a. NIST must meet the requirements of 29 CFR 1960.26, Conduct of Inspections, and 29 CFR  
53 1960.30, Abatement of Unsafe or Unhealthful Working Conditions, which establish  
54 minimum UWC inspection and abatement requirements. Implementation of this suborder  
55 through the requirements in Section 6 and the roles and responsibilities in Section 9 fulfills  
56 those requirements.  
57  
58

59 **3. APPLICABILITY**

- 60 a. The requirements in Section 6 of this suborder apply to UWCs reported by employees to the  
61 CSO to request inspections of those UWCs by OSHE.  
62
- 63 b. The process outlined in Appendix A of this suborder applies to perceived UWCs that can be  
64 addressed by employees themselves or by employees working with their line management,  
65 OU/division safety personnel, OSHE, or others,<sup>2</sup> This process should be followed whenever  
66 possible, but its existence does not preclude employees from reporting UWCs to the CSO at  
67 any point to request inspections by OSHE.  
68  
69

70 **4. REFERENCES**

71 For references common to all NIST Occupational Safety and Health (OSH) suborders, see NIST  
72 O 710. References specific or pertinent to this suborder are:

- 73  
74 a. [NIST P 710](#), Occupational Safety and Health Policy  
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<sup>1</sup> For NIST, the agency safety and health official is the CSO, who is also the Director of OSHE.

<sup>2</sup> This suborder distinguishes between employees communicating UWCs to OSHE to request safety assistance and employees reporting UWCs to the CSO to request inspections by OSHE. OSHE will ascertain employee intent when it receives employee requests.

- 76 b. [OSH Act of 1970, Section 19](#), Federal Agency Safety Programs and Responsibilities;  
77  
78 c. [Executive Order 12196](#), Occupational Safety and Health Programs for Federal Employees;  
79  
80 d. [29 CFR 1960.28](#), Employee Reports of Unsafe or Unhealthful Working Conditions;  
81  
82 e. [29 CFR 1960.26](#), Conduct of Inspections; and  
83  
84 f. [29 CFR 1960.30](#), Abatement of Unsafe or Unhealthful Working Conditions.  
85

## 86 87 **5. APPLICABLE NIST OCCUPATIONAL SAFETY AND HEALTH SUBORDERS**

88 Other NIST occupational safety and health suborders applicable to work covered by this  
89 suborder include:

- 90  
91 a. NIST S 7101-01, Safety Rights and Responsibilities;  
92  
93 b. NIST S 7101-03, Stop Work;  
94  
95 c. NIST S 7101-23, Safety Education and Training; and  
96  
97 d. NIST S 7101-24, Incident Reporting and Investigation.  
98

## 99 100 **6. REQUIREMENTS**

101 As indicated in Section 1, employees should, whenever possible, abate UWCs themselves or  
102 work with their management, OU/division safety personnel, OSHE, or others to abate the UWCs  
103 before reporting them to the CSO to request inspections by OSHE. The present section delineates  
104 the requirements of the formal mechanism for reporting UWCs to the CSO, and Section 9  
105 provides the associated responsibilities. Appendix B, Employee Reporting of UWCs to the CSO,  
106 presents most of this information in flow chart.

### 107 108 a. Reporting of Perceived UWCs to the CSO to Request Inspections by OSHE

109  
110 (1) Such perceived UWCs should be reported by employees to the CSO using the most  
111 expeditious means available.<sup>3</sup>  
112

113 (2) If it is determined by OSHE that there are not reasonable grounds to believe that a  
114 reported UWC exists and that OSHE does not plan to conduct an inspection based on

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<sup>3</sup> For example, reports of perceived UWCs may be made by calling x5375, Option 3.

115 such report, the reporting employee shall be notified by the CSO of that determination in  
116 writing within 15 calendar days of receipt of the report.

117  
118 b. Inspection of Reported UWCs by OSHE

119  
120 (1) Reported UWCs shall be characterized immediately by OSHE as imminent danger,  
121 serious, or other than serious.<sup>4</sup>

122  
123 (2) If an imminent-danger UWC is suspected by OSHE based on the information reported, a  
124 responsible line manager in the responsible OU will be notified immediately by OSHE,  
125 with instructions to remove employees from the danger as quickly as possible.<sup>5</sup>

126  
127 (3) Reported UWCs shall be inspected by OSHE within the following timeframes:

128  
129 (a) As soon as possible for suspected imminent-danger UWCs but always within 24  
130 hours;

131  
132 (b) 3 business days for suspected serious UWCs; and

133  
134 (c) 20 business days for suspected other-than-serious UWCs;

135  
136 (4) Inspected UWCs shall be characterized by OSHE as imminent danger, serious, or other  
137 than serious using the procedure provided in Appendix C.

138  
139 (5) If an imminent-danger UWC is identified during an inspection, an oral stop-work Order  
140 shall be issued by the OSHE inspector(s) in accordance with the requirements of the Stop  
141 Work suborder.<sup>6</sup>

142  
143 (6) A written inspection report that includes a description of the inspection procedures and  
144 details any findings and recommended corrective actions shall be prepared by OSHE for  
145 each reported UWC.

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<sup>4</sup> Technically, imminent-danger conditions are a subset of serious conditions. Nevertheless, serious conditions that present an imminent danger are referred to simply as “imminent danger conditions”, and serious conditions that do not present an imminent danger are referred to as “serious conditions”.

<sup>5</sup> OSHE will attempt to contact the Group Leader first, followed by the Division Chief.

<sup>6</sup> The issuance of an oral stop-work order starts a separate process that proceeds in parallel with the inspection process; that is, the stop-work process does not replace or supersede the inspection process. An oral stop-work order requires specific actions to be taken by the OU Director, CSO, and others. Refer to the Stop Work suborder for details.

149 c. Notices of UWCs

150

151 (1) If an inspection results in a finding of an imminent-danger or serious UWC, a written  
152 notice of an UWC shall be issued by OSHE to the responsible Division Chief and  
153 provided to the reporting employee along with the inspection report.

154

155 (2) The UWC notice shall characterize and describe the nature of the UWC, indicate any  
156 regulations or other requirements it violates, and provide a timeframe for abatement.

157

158 (3) The UWC notice, or a copy of it, shall be posted immediately by the OU, either at or near  
159 the location where the UWC exists or existed; if that is not possible, it shall be posted in a  
160 prominent place where all affected employees can read it.

161

162 (4) Any additional notices describing special measures in effect during abatement of the  
163 UWC shall also be posted by the OU.

164

165 (5) Each notice, or a copy of it, shall remain posted until it has been determined by the OU  
166 that the UWC has been abated or for 3 business days, whichever is longer.

167

168 d. Abatement of UWCs

169

170 (1) Upon receipt by an OU of an inspection report confirming the existence of an UWC,  
171 corrective actions shall be identified and implemented by the OU.

172

173 (2) If it is determined by the OU that the corrective actions for imminent-danger or serious  
174 UWCs cannot be completed within 30 calendar days of receipt of the inspection report, a  
175 corrective-action plan (CAP), including any interim measures necessary to protect  
176 employees, shall be developed and provided to OSHE by the OU before 30 calendar days  
177 have elapsed and by the means specified in the inspection report.

178

179 (3) Corrective actions for imminent-danger and serious UWCs shall be developed and  
180 implemented by the OU within the timeframe specified in the associated UWC notice. If  
181 this is not possible, a written request for an extension shall be submitted to OSHE by the  
182 responsible Division Chief before the end of the timeframe specified in the notice and by  
183 the means specified in the inspection report.

184

185 e. Communication

186

187 (1) Inspection reports shall be provided by OSHE to reporting employees and responsible  
188 Division Chiefs within 15 calendar days of UWCs being inspected, unless there are

189 compelling reasons why such reports cannot be provided within 15 calendar days, in  
190 which case reporting employees and responsible Division Chiefs shall be informed of the  
191 delay.

192  
193 (2) When the corrective actions for abating UWCs have been completed, the corrective  
194 actions and their completion dates shall be provided to OSHE by the responsible Division  
195 Chief by the means specified in the inspection report.

196  
197 (3) When the corrective actions for abating UWCs have been completed by the OUs, the  
198 corrective actions and their completion dates shall be provided to reporting employees by  
199 OSHE.

200  
201

## 202 7. DEFINITIONS

203 For definitions common to all NIST OSH suborders, see NIST O 710. Definitions specific to  
204 this suborder are as follows:

205

206 a. Authorized Representative of the Secretary of Labor – A person or agent of the Secretary of  
207 Labor whose authority and jurisdiction originates from the Secretary of Labor; routinely a  
208 Department of Labor employee.

209

210 b. Corrective-Action Plan (CAP) – A set of planned actions to abate a recognized deficiency  
211 and their estimated completion dates.

212

213 c. Imminent Danger (Condition or Practice) – Any serious condition or practice in any  
214 workplace which is such that a danger exists which could reasonably be expected to cause  
215 death or serious physical harm immediately or before the imminence of such danger can be  
216 eliminated through normal procedures.

217

218 d. Serious (Condition or Practice) – A condition or practice in any workplace such that there is  
219 a substantial probability that death or serious physical harm could result.

220

221 e. UWC – Any condition or practice in any workplace that could have a direct or immediate  
222 adverse impact on safety or health.<sup>7</sup>

223

224 f. Workplace – A physical location where NIST work is performed.

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<sup>7</sup> Note that UWCs are conditions or practices, not “events”. As such, UWCs are not “incidents” as defined in the Incident Reporting and Investigation suborder, i.e., they are not work-related **events** in which any of the following, individually or in combination, occurred or could have occurred: an injury or illness; an unauthorized spill or release of hazardous or regulated material to the environment; damage or loss of equipment or property, and they are not reported in the NIST Incident Reporting and Investigation System (IRIS).

225 **8. ACRONYMS**

226 For acronyms common to all NIST OSH suborders, see NIST O 710. Acronyms specific or  
227 pertinent to this suborder are:

228

229 a. CAP – Corrective-Action Plan

230

231 b. CFR – Code of Federal Regulations

232

233 c. CSO – Chief Safety Officer

234

235 d. OSH – Occupational Safety and Health

236

237 e. OSHE – Office of Safety, Health, and Environment

238

239 f. OU – Organizational Unit

240

241 g. UWC – Unsafe or Unhealthful Working Condition

242

243

244 **9. ROLES AND RESPONSIBILITIES**

245 For roles and responsibilities applicable to all NIST OSH programs, see [NIST O 710](#). Roles and  
246 responsibilities specific to this suborder are as follows:

247

248 a. All Employees:

249

250 (1) Before reporting perceived UWCs to the CSO to request inspections by OSHE, follow  
251 the process outlined in Appendix A for abating perceived UWCs; and

252

253 (2) When reporting UWCs to the CSO to request inspections by OSHE, indicate whether  
254 they desire that their names not be disclosed to anyone outside of OSHE other than an  
255 Authorized Representative of the Secretary of Labor, or as otherwise required by law.

256

257 b. OU Line Management and OU/Division Safety Personnel:

258

259 (1) Upon receiving employee communications of UWCs, follow the process outlined in  
260 Appendix A for responding to the UWCs.

261

262

263

264

265 c. Division Chiefs:

266

267 (1) Upon receiving UWC notices from OSHE, ensure that those notices are posted in  
268 accordance with the requirements in Sections 6c(3)-(5);

269

270 (2) Upon receiving inspection reports from OSHE for UWCs in their respective divisions,  
271 ensure that those UWCs are abated in accordance with the requirements in Section 6d;  
272 and

273

274 (3) When the corrective actions for abating UWCs have been completed, provide those  
275 corrective actions and their completion dates to OSHE by the means specified in the  
276 inspection report.

277

278 d. CSO:

279

280 (1) Ensure that OSHE staff members receiving employee communications regarding  
281 perceived UWCs determine whether employees are requesting safety assistance or  
282 reporting UWCs to the CSO to request inspections by OSHE;<sup>8</sup>

283

284 (2) Ensure that OSHE staff members do not disclose the names of reporting employees who  
285 desire non-disclosure to anyone outside of OSHE other than an Authorized  
286 Representative of the Secretary of Labor, or as otherwise required by law;

287

288 (3) Ensure that employee oral reports of perceived UWCs to the CSO are reduced to writing  
289 and contain the following information:

290

291 (a) Name and contact information of the reporting employee;

292

293 (b) Indication of whether the reporting employee desires that his or her name not be  
294 disclosed to anyone outside of OSHE other than an Authorized Representative of the  
295 Secretary of Labor, or as otherwise required by law;

296

297 (c) Brief description of the UWC;

298

299 (d) Date and time the UWC was first observed;

300

301 (e) Where the UWC is located, *e.g.*, site, building, room, *etc.*;

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<sup>8</sup> If it is determined that employees are requesting safety assistance, OSHE will assist those employees in promptly analyzing and abating the perceived UWCs. As indicated in Section 3b, the provision of such assistance is outside the scope of this suborder.

- 302 (f) OU responsible for the space where the UWC is located, if known; and  
303
- 304 (g) Brief description of any immediate measures taken to abate the UWC and to notify  
305 potentially affected employees;  
306
- 307 (4) If it is determined by OSHE that there are not reasonable grounds to believe that a  
308 reported UWC exists and that OSHE does not plan to conduct an inspection based on  
309 such report, ensure that the reporting employee is notified of that determination in  
310 writing within 15 calendar days of receipt of the report;  
311
- 312 (5) Ensure that all other reported UWCs are characterized immediately as imminent danger,  
313 serious, or other than serious and inspected by OSHE in accordance with the  
314 requirements in Sections 6b(3)-(6);  
315
- 316 (6) If an imminent-danger UWC is suspected based on reported information, ensure that the  
317 responsible supervisor or other official in the responsible OU is notified immediately to  
318 remove employees from the danger as quickly as possible;  
319
- 320 (7) Ensure that inspection reports are provided to reporting employees and responsible  
321 Division Chiefs within 15 calendar days of UWCs being inspected, or if there are  
322 compelling reasons why such reports cannot be provided within 15 calendar days, that  
323 reporting employees and responsible Division Chiefs are informed of the delay;  
324
- 325 (8) When an inspection results in a finding of an imminent-danger or serious UWC, ensure  
326 that a written notice is issued in accordance with the requirements of Sections 6c(1)-(2);  
327
- 328 (9) When corrective actions for abating UWCs have been completed by the OUs, ensure  
329 that the reporting employee is provided with those corrective actions and their  
330 completion dates;  
331
- 332 (10) For each reported UWC, ensure that a sequentially numbered case file, coded for  
333 identification and containing the following information, is maintained and retained for a  
334 minimum of five years after abatement:  
335
- 336 (a) The information listed in Section 9d(3);  
337
- 338 (b) Documentation of OSHE's determination that there are not reasonable grounds to  
339 believe that a reported UWC exists and of its decision not to conduct an inspection  
340 based on such report, when applicable;  
341

- 342 (c) OSHE's initial characterization of all other UWCs as imminent danger, serious, or  
343 other than serious;  
344
- 345 (d) OSHE's final characterization of the UWC, if different from the initial  
346 characterization;  
347
- 348 (e) The names of the OSHE staff member(s) who conducted the inspection;  
349
- 350 (f) A copy of the inspection report;  
351
- 352 (g) Copies of any UWC notices issued by OSHE and any additional notices posted by  
353 the OU;  
354
- 355 (h) A copy of the CAP developed by the OU when it has been determined by the OU  
356 that corrective actions cannot be completed within 30 calendar days of receipt of the  
357 inspection report; and  
358
- 359 (i) The corrective actions taken by the OU to abate the UWC and their completion  
360 dates;  
361
- 362 (11) Ensure that training on this suborder is included in the training for line managers, safety  
363 and health specialists, and OU/division safety personnel required by the Safety  
364 Education and Training suborder; and  
365
- 366 (12) Ensure that case files of employee-reported UWCs are made available to the Secretary  
367 of Labor or the Secretary's authorized representative upon request.  
368

## 370 10. AUTHORITIES

371 For authorities applicable to all NIST OSH suborders, see NIST O 710. In addition:

### 373 a. Employees:

- 374
- 375 (1) Report UWCs directly to an authorized representative of the Secretary of Labor.<sup>9, 10</sup>  
376  
377

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<sup>9</sup> The Secretary of Labor encourages employees to use agency procedures as the most expeditious means of achieving abatement of UWCs.

<sup>10</sup> UWCs may be reported to an authorized representative of the Secretary of Labor by calling 1-800-321-OSHA.

378 **11. DIRECTIVE OWNER**

379 CSO

380

381

382 **12. APPENDICES**

383 A. Flow Chart for Employee/Management Actions in Response to Perceived UWCs

384

385 B. Flow Chart for Employee Reporting of UWCs to the CSO

386

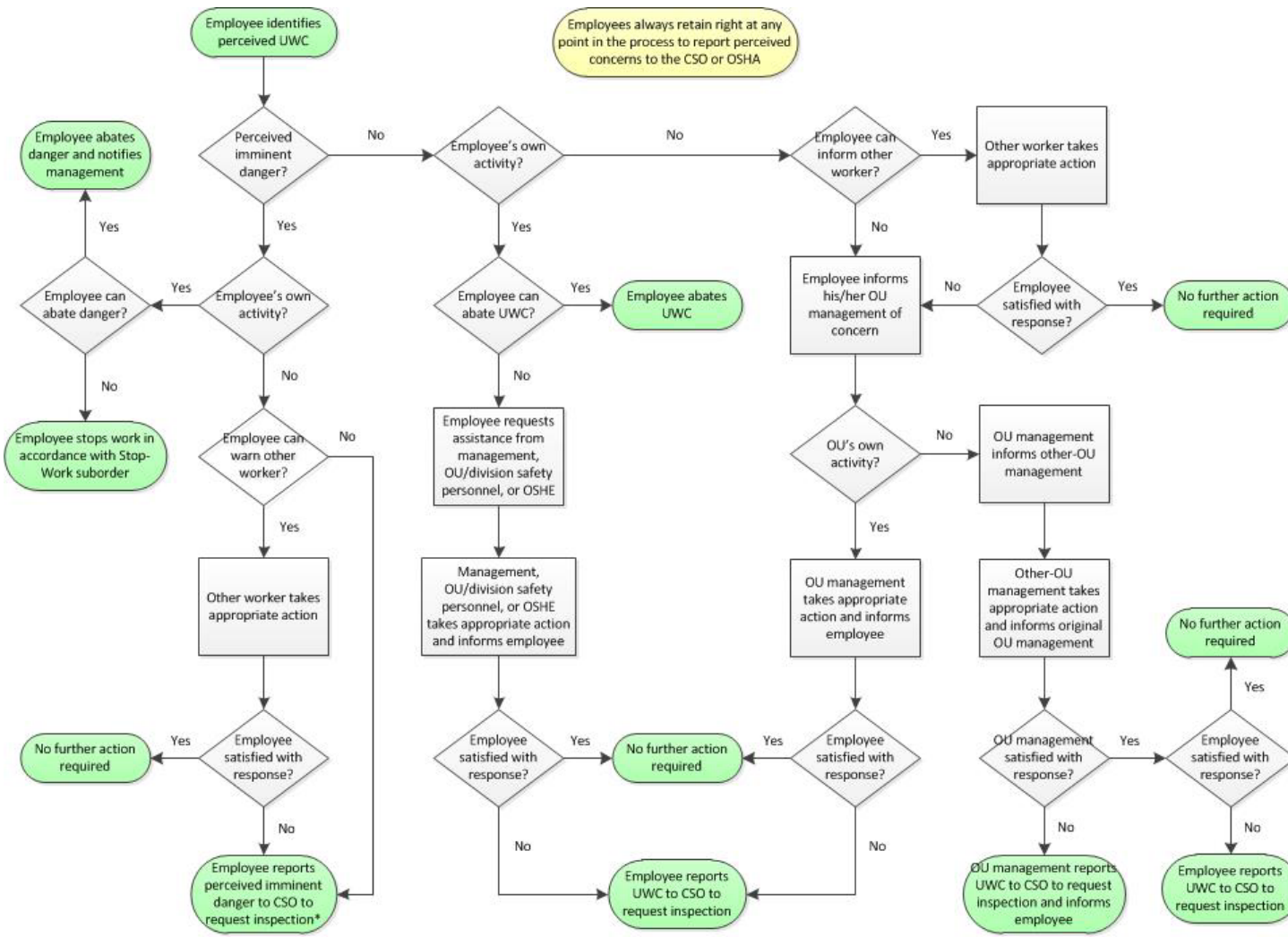
387 C. Serious and Imminent Danger Determinations by OSHE

388

389 D. Revision History

390

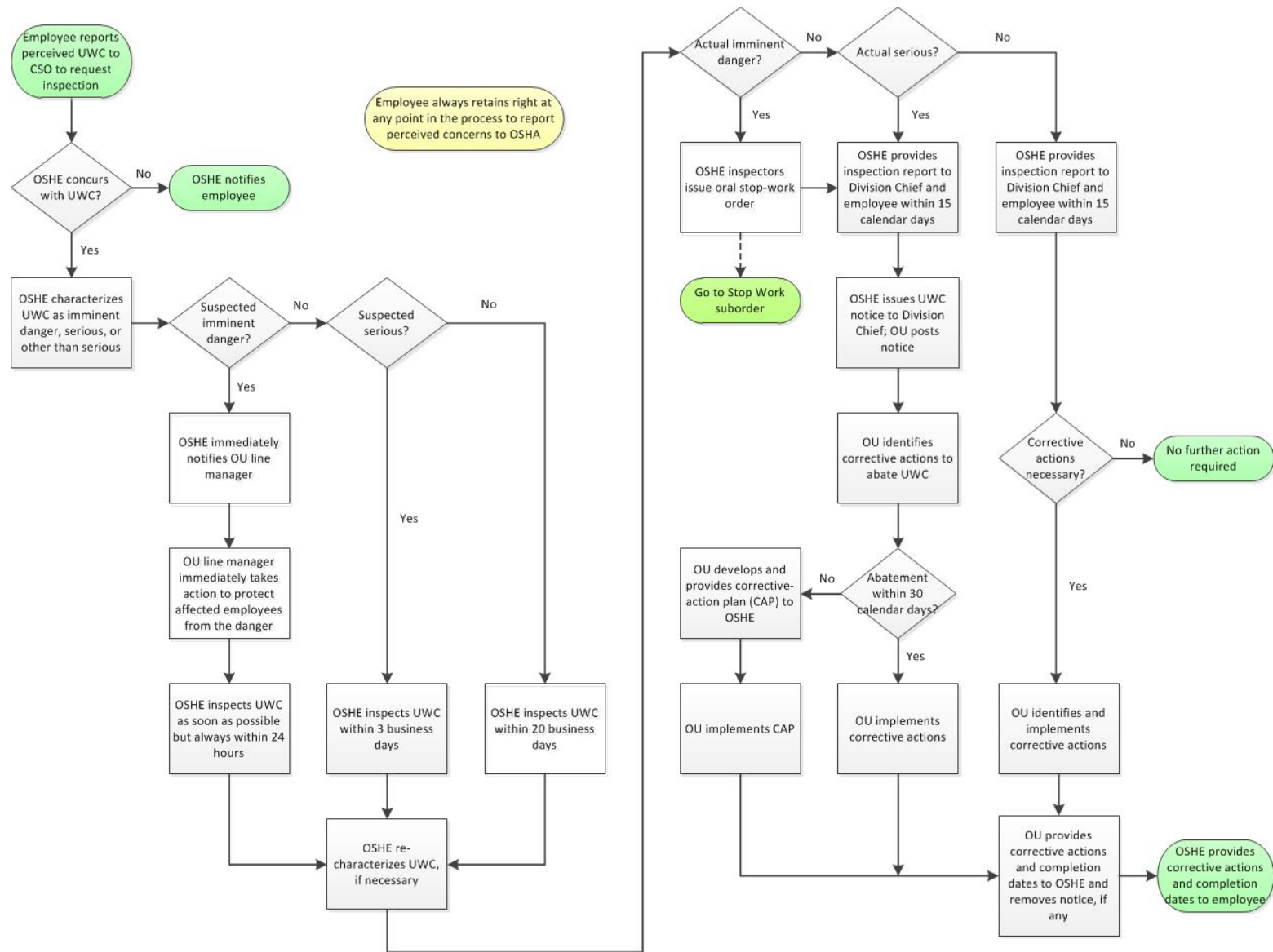
## Appendix A. Flow Chart for Employee/Management Actions in Response to Perceived UWCs



Employees always retain right at any point in the process to report perceived concerns to the CSO or OSHA

\* If the activity is in the employee's OU, the employee may report his or her concern to OU management if he or she believes that such reporting will result in more expeditious abatement of the danger than reporting to the CSO.

## Appendix B. Flow Chart for Employee Reporting of UWCs to the CSO



## Appendix C. Serious and Imminent Danger Determinations by OSHE

A Notice of Unsafe or Unhealthful Working Conditions (Notice) is required when a workplace inspection identifies a situation that meets the definition of a serious working condition. In addition, a serious condition that poses an imminent danger requires issuance of a Stop Work Order, except when it is immediately corrected and controls are in place to make its recurrence unlikely. This appendix outlines the procedure that shall be followed by OSHE inspectors for making serious working condition and imminent danger determinations.

### **Determination of a “Serious” Condition.**

A serious working condition is one where a safety deficiency presents a hazard to one or more persons in which there is a substantial probability that death or serious physical harm could result. Inspectors and investigators will consider whether there is a substantial probability<sup>11</sup> that death or serious physical harm could result from an incident or exposure relating to the safety deficiency using the following three step process:

Step 1. Identify the type of potential hazards that the safety deficiency presents. If the deficiency presents more than one type of hazard, the inspector/investigator will determine which hazard could reasonably be predicted to result in the most severe injury or illness and will use that as the basis for the determination.

The following examples illustrate this step:

*Example A: Employees are observed working at the unguarded edge of an open-sided floor 30 feet above the ground. The type of hazard is a fall from the edge of the floor to the ground below.*

*Example B: Employees are observed working in an area in which debris is located. The type of hazard is tripping on debris.*

*Example C: Employees are observed working with methylene chloride without ventilation or respiratory protection. The type of hazard is inhalation exposure to methylene chloride.*

Step 2. Identify the most serious injury or illness that could reasonably be expected to result from the potential hazardous exposure identified in Step 1. In making this determination,

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<sup>11</sup> NOTE: The key determination is the likelihood that death or serious harm will result **IF** an accident or exposure occurs. **The likelihood of an accident occurring is not addressed in making this determination.**

inspectors/investigators shall consider all factors that would affect the severity of the injury or illness that could reasonably result from the exposure to the hazard.

For conditions involving exposure to air contaminants or harmful physical agents, inspectors/investigators will consider the concentration levels of the contaminant or physical agent in determining the types of illness that could reasonably result from the exposure. Inspectors/investigators will also consider the nature of the operation from which the exposure results, such as:

- Whether the exposure is regular and ongoing or is of limited frequency and duration;
- How long employees have worked at the operation in the past;
- Whether employees are performing functions which can be expected to continue; and
- Whether work practices, engineering controls, production levels, and other operating parameters are typical of normal operations.

The following examples align with the previous examples to illustrate this step:

*Example A: If an employee falls from the edge of an open-sided floor 30 feet to the ground below, the employee could die, break bones, suffer a concussion, or experience other serious injuries that would substantially impair a body function.*

*Example B: If an employee trips on debris, the trip may cause abrasions or bruises, but it is only marginally predictable that the employee could suffer a substantial impairment of a bodily function. If, however, the area is littered with protruding rebar, broken glass, or other sharp objects, it is reasonably predictable that an employee who tripped on debris could suffer deep cuts/punctures which could require suturing.*

*Example C: If an employee is exposed regularly to methylene chloride at 100 ppm, it is reasonable to predict that cancer could result.*

**Step 3.** Determine whether the type of injury or illness identified in Step 2 could include death or a form of serious physical harm. In making this determination, utilize the following definition of serious physical harm: Impairment of the body in which part of the body is made functionally useless or is substantially reduced in efficiency on or off the job. Such impairment may be permanent or temporary, chronic or acute. Injuries involving such impairment would usually require treatment by a medical doctor or other licensed health care professional.

Injuries that constitute serious physical harm include, but are not limited, to:

- Amputations (loss of all or part of a bodily appendage);
- Concussion;

- Crushing (internal, even though skin surface may be intact);
- Fractures (simple or compound);
- Burns or scalds, including electric and chemical burns;
- Cuts, lacerations, or punctures involving significant bleeding and/or requiring suturing;
- Sprains and strains; and
- Musculoskeletal disorders.

Illnesses that constitute serious physical harm include, but are not limited, to:

- Cancer;
- Respiratory illnesses (silicosis, asbestosis, byssinosis, etc.);
- Hearing impairment;
- Central nervous system impairment;
- Visual impairment; and
- Poisoning.

The following examples align with the previous examples to illustrate this step:

*Example A: If an employee falls from the edge of an open-sided floor 30 feet to the ground below, the likely result (i.e. death, broken bones, a concussion, or other serious injuries that would substantially impair a body function) would support a “serious” determination.*

*Example B: If an employee trips on debris in an area without other hazards (e.g. impalement) where it is unlikely that the employee could suffer a substantial impairment, a determination of “other than serious” would be warranted. If, however, the area is littered with protruding rebar, broken glass, or other sharp objects that would likely cause deep cuts/punctures which could require suturing, a determination of “serious” would be more appropriate.*

*Example C: Routine exposure to methylene chloride at levels that could reasonably result in cancer would support a “serious” determination.*

### **Determination of an “Imminent Danger” Condition.**

An imminent danger is one where a safety deficiency presents a hazard which could reasonably be expected to cause death or serious physical harm immediately or before the imminence of such danger can be eliminated through normal procedures.

When making an imminent danger determination, inspectors and investigators will consider whether the following conditions are present:

- The deficiency constitutes a serious<sup>12</sup> condition as outlined above; **and**
- It is reasonably likely that a serious incident could occur immediately or, if not immediately, then before abatement would otherwise be implemented.

This determination is highly dependent upon the specific activities, co-located hazards, work practices, and other factors present in the work environment.

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<sup>12</sup> For a health hazard, exposure to the toxic substance or other hazard must cause harm to such a degree as to shorten life or be immediately dangerous to life and health (IDLH) or cause substantial reduction in physical or mental efficiency or health, even though the resulting harm may not manifest itself immediately.

### Appendix D. Revision History

| Revision No. | Approval Date | Responsible Person | Brief Description of Change; Rationale |
|--------------|---------------|--------------------|--|
| 1            | 1/5/21        | April Camenisch    | Updated suborder links.                |