

Process Hazard Analysis External Events Checklist

Facility: _____ Date: _____

Team Members: _____

Item	Question	Answer (Y, N, N/A)	Justification	Recommendations
<i>EARTHQUAKE</i>				
1.	Is equipment adequately protected to prevent a hazardous materials release due to building damage as a result of seismic activity?			
2.	Is equipment adequately protected to prevent a hazardous materials release due to piping support failure as a result of seismic activity?			
3.	Are personnel adequately protected to prevent injury from a hazardous materials release as a result of seismic activity?			
4.	Are personnel adequately protected to prevent injury from seismic activity?			
5.	Have the results of all seismic analyses been documented to support the above answers?			
<i>HIGH WINDS</i>				
6.	Is equipment adequately protected from damage due to movement of process equipment as a result of high winds?			
7.	Is equipment adequately protected from damage from impact of wind-borne debris?			
8.	Is equipment adequately protected from neighboring structures that might be damaged from high winds?			
9.	Are procedures in place to restrict elevated work when winds exceed 25 mph?			

Item	Question	Answer (Y, N, N/A)	Justification	Recommendations
<i>LIGHTNING / STATIC ELECTRICITY / POWER LOSS</i>				
10.	Is equipment adequately protected from damage from lightning?			
11.	Are personnel adequately protected from injury from lightning?			
12.	Are utilities adequately protected from lightning or static electricity?			
13.	Are procedures in place for bonding and grounding material transfers to protect against static energy accumulation and discharge?			
14.	Are procedures in place to manage a partial or complete loss of power and other utilities?			
<i>FIRE OR EXPLOSION</i>				
15.	Is equipment adequately protected from external fire or explosion?			
16.	Are personnel adequately protected from injury from fire or explosion?			
17.	Are good housekeeping practices maintained to minimize accumulation of flammable materials in process areas?			
<i>RELEASE FROM NEIGHBORING FACILITIES</i>				
18.	Is equipment adequately protected from neighboring facilities that could have a hazardous materials release, explosion, or blast?			
19.	Are personnel adequately protected from neighboring facilities that could have a hazardous materials release, explosion, or blast?			
20.	If a neighboring facility could have an explosion or blast resulting in damage to your facility, is equipment adequately protected from a hazardous materials release?			

Item	Question	Answer (Y, N, N/A)	Justification	Recommendations
<i>RELEASE FROM NEIGHBORING PROCESSES</i>				
21	Is equipment adequately protected from neighboring processes that could have a hazardous materials release, explosion, or blast?			
22	Are personnel adequately protected from neighboring processes that could have a hazardous materials release, explosion, or blast?			
23	If a neighboring process could have an explosion or blast resulting in damage to your process, is equipment adequately protected from a hazardous materials release?			
<i>VEHICULAR IMPACTS</i>				
24	Is equipment adequately protected from vehicular impacts?			
25	Are procedures/practices in place to manage vehicular movement (e.g., cranes, trains, vehicles) in process areas during all hours of the day/night including in normal and inclement weather?			
<i>INCLEMENT WEATHER</i>				
26	Is equipment adequately protected from extreme ambient high/low temperatures?			
27	Can ice plugs be formed in process lines or equipment due to very low ambient temperatures (e.g., low spot in vapor header)?			
28	Is equipment adequately protected from flooding from internal as well as external sources?			
29	Are procedures/practices in place for removing rainwater from secondary containment areas in a timely manner and are they adequate?			
<i>MISCELLANEOUS</i>				
30	Are measures in place to minimize impacts to process			

Item	Question	Answer (Y, N, N/A)	Justification	Recommendations
	equipment due to a disgruntled employee?			
31.	Has a Security Vulnerability Assessment (SVA) been performed to evaluate potential impacts to process equipment?			

Data sources:

AcuTech Process Risk Management, Process Hazard Analysis Evaluation of External Forces
CCHMP CalARP Guidance Document, Chapter 7