



## Nevada Division of Environmental Protection Chemical Accident Prevention Program Element Audit Checklist



<b>Facility:</b>	<b>Process(es) Covered:</b>	<b>Date:</b>	
<b>III. PROCESS HAZARD ANALYSIS (PHA)</b>			
<b>A. RECORDS AUDIT/REVIEW</b>			
<b>1) EXISTENCE, COMPLETENESS OF PHA</b>			
<b>a. Compliance of Facility Program with Specific Code Requirements</b>		<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Does the PHA appear to be complete for the covered process and/or subprocess (i.e. sections 2 through 8 satisfied)?		459.95414	
<b>b. Potential Enhancements to Facility Program</b>			<b>Resp. Code</b>
i.			
Notes/Comments Pertaining to Responses to Questions under Issue 1):			
<b>2) INFORMATION PERTAINING TO PHA TIMING</b>			
<b>a. Compliance of Facility Program with Specific Code Requirements</b>		<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Was the PHA completed by the established deadline?		459.95414(2&3)	
ii. Was the relevant Process Safety Information compiled and verified prior to conducting the PHA? (Refer to PSI Compilation Checklist)		459.95412(1)	
<b>b. Potential Enhancements to Facility Program</b>			<b>Resp. Code</b>
i.			
Notes/Comments Pertaining to Responses to Questions under Issue 2):			



<b>3) INFORMATION PERTAINING TO PHA METHODOLOGY</b>		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Was the PHA methodology approved by CAPP staff prior to proceeding, and was that methodology used by the facility?	459.95414(4)	
ii. Was the PHA methodology selected from the options provided in regulation?	459.95414(5)	
<b>b. Potential Enhancements to Facility Program</b>		<b>Resp. Code</b>
i. Does it appear that the manner of documentation for the PHA (table, form, checklist, computer software, etc) was appropriate for the methodology?		
ii. Were additional PHA methodologies used to supplement the selected methodology?		
Notes/Comments Pertaining to Responses to Questions under Issue 3):		
<b>4) INFORMATION PERTAINING TO PHA PERFORMANCE</b>		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Has a list of previous accidents and near-misses been developed for consideration by the PHA team?	459.95414(6b)	
ii. Have previous accidents and near-misses been considered by the team when conducting the PHA?	459.95414(6b)	
iii. Have all portions of the regulated process been included in the PHA?	459.95336(3) 459.95338(4) 459.95281	
iv. Have any utilities or auxiliary processes, that could potentially cause an accidental release, fire or explosion in the regulated process, been included in the PHA?	459.95414(6a) 459.95281	
v. Do potential hazards appear to have been identified?	459.95414(6a)	
vi. Does Consequence of Hazard reflect failure of Engineering and Administrative Controls, OR, if consequence of hazard does not reflect complete failure of Engineering and Administrative Controls, have those controls that were assumed to be functional been thoroughly evaluated to ensure they are adequately designed and maintained?	459.95414(6d)	
vii. Is Consequence of Hazard brought to completion and does it reflect Safety and Health effects when those effects are possible?	459.95414(6g)	



viii.	Has impact of functioning Engineering and Administrative Controls been considered when defining the likelihood of the identified hazard resulting in the defined consequence?	459.95414(6c)	
ix.	Has impact of failed Engineering and Administrative Controls been considered when defining the Severity of the Consequence of the identified Hazards?	459.95414(6d)	
x.	Have Facility Siting issues been thoroughly addressed as part of the defined PHA method, or as a separate study (such as a siting checklist)?	459.95414(6e) 459.95414(7b)	
xi.	Have Human Factors been thoroughly addressed as part of the defined PHA method, or as a separate study (such as a human factors checklist)?	459.95414(6f) 459.95414(7a)	
xii.	Have External Forces been thoroughly addressed as part of the defined PHA method, or as a separate study and include consideration of the external forces listed under xiii through xx below?	459.95414(7c)	
xiii.	Earthquake. Does structural design meet the appropriate seismic design criteria? Are pipelines, supports and equipment properly anchored or guided to withstand earthquakes?	459.95414(7c)	
xiv.	High Winds. Is the process and associated buildings properly designed to withstand wind loads?	459.95414(7c)	
xv.	Lightning and Static Electricity. Is the process adequately grounded from lightning strikes and adequately grounded or bonded to prevent sparking or arcing?	459.95414(7c)	
xvi.	Fire or Explosion in Adjacent Equipment or Facilities. Have the impacts of fire and explosion in an adjacent facility been evaluated and are there adequate safeguards and response procedures in place to address these occurrences?	459.95414(7c)	
xvii.	Loss of Utilities including electricity, process and fire water, instrument air, steam and nitrogen. This evaluation should focus on loss of the utility to the whole process or some part of the process, rather than loss to an individual piece of equipment or an instrument. Has utility loss been evaluated, and have the hazards posed by utility loss been adequately mitigated?	459.95414(7c)	
xviii.	Release of a Hazardous Material in an adjacent piece of equipment or an adjacent facility. Have the impacts of a hazardous material release in an adjacent piece of equipment or facility been evaluated and are there adequate response procedures in place to address these occurrences? If the process area must be evacuated quickly, can the process be left unmanned or automatically shutdown?	459.95414(7c)	
xix.	Vehicular or Rail Car Impact on equipment or instruments in the process. Has the potential for impact been evaluated and is there adequate mitigation in place?	459.95414(7c)	
xx.	Breakdown of Facility Security or inadequate facility security. Has the adequacy of facility security been evaluated, and is there adequate security in place?	459.95414(7c)	
<b>b. Potential Enhancements to Facility Program</b>			<b>Resp. Code</b>
i.	Has the process been divided into small, manageable segments, or nodes, for PHA evaluation?		
ii.	Do the accompanying P&IDs clearly define the extent of the PHA and each node?		
iii.	Has the accident history related to this substance or to a similar process operated elsewhere in industry, been identified and considered during the PHA?		
iv.	Was Process Safety Information reviewed by team members in advance of the PHA sessions?		



v. Were plant operators and mechanics interviewed by team members in advance of PHA sessions to discuss safety concerns related to process operation or maintenance?	
Notes/Comments Pertaining to Responses to Questions under Issue 4):	
<b>5) INFORMATION PERTAINING TO CONSIDERATION OF ALTERNATIVES</b>	
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>Ref. Resp. Code</b>
i. Has a safer alternative process, that yields the same results as the existing process, been identified and considered for the current plant location?	NRS 459.3852(1)
ii. Has substitution with a less hazardous substance been considered where substitution is possible?	NRS 459.3852(2)
iii. Has the need for additional safety equipment; such as personal protective equipment, toxic and combustible gas sensors, fire water system expansions, plant alarms, etc., been identified and considered?	NRS 459.3852(2)
<b>b. Potential Enhancements to Facility Program</b>	<b>Resp. Code</b>
i	
Notes/Comments Pertaining to Responses to Questions under Issue 5):	
<b>6) INFORMATION PERTAINING TO THE TEAM CONDUCTING THE PHA</b>	
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref. Resp. Code</b>



i. If process is subject to provisions of Tier A program, did the team conducting the PHA: 1. have the membership defined by NAC 459.95472, and 2. participate pursuant to NAC 459.95474? (Refer to Tier A Process PHA Team Qualifications Table)	459.95414(8a)	
ii. If process is not subject to provisions of Tier A program, did the team conducting the PHA have a members with: 1. expertise in engineering and process operations, 2. knowledge specific to the process being evaluated, and 3. knowledge in the specific PHA methodology being employed? (Refer to Tier B Process PHA Team Qualifications Table)	459.95414(8b)	
<b>b. Potential Enhancements to Facility Program</b>		<b>Resp. Code</b>
i. Were additional facility personnel; such as operators, mechanics or I&E technicians, involved in various aspects of the PHA?		
Notes/Comments Pertaining to Responses to Questions under Issue 6):		
<b>7) INFORMATION PERTAINING TO PHA RECOMMENDATIONS AND THE PLAN TO ABATE HAZARDS</b>		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Has a course of action been determined for each PHA Recommendation?	459.95414(9a) 459.95414(9b)	
ii. If a decision has been made to not address a proposed Recommendation, is the reason justified and documented?	459.95414(9b)	
iii. Is the resolution of each Recommendation scheduled, with emphasis that it be completed as soon as possible?	459.95414(9c) 459.95414(9d)	
iv. Are PHA Recommendations being shared with all potentially affected employees (including operators, mechanics, I&E technicians and engineers)?	459.95414(9e)	
v. Have all Recommendations, resulting from the PHA and any other checklist evaluations, been carried forward to the P.T.A.H. as required by NAC 459.95452? (Refer to element checklist XV Plan to Abate Hazards)	459.95414(9f)	
<b>b. Potential Enhancements to Facility Program</b>		<b>Resp. Code</b>
i. Have responsible personnel been identified for resolution of each recommendation?		
ii. Is the status for resolution of each recommendation tracked and responsible personnel held accountable?		



Notes/Comments Pertaining to Responses to Questions under Issue 7):		
<b>8) INFORMATION PERTAINING TO PHA REVALIDATION</b>		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. For a new PHA that is intended to serve as a Revalidation, does the PHA comply with sections 1 through 7 above? (If a new PHA was not performed for revalidation, mark NA for this item.)	459.9549(2)	
ii. If an existing PHA was revalidated, was the revalidated PHA brought into compliance with sections 1 through 6 above? (If an existing PHA was not revalidated, mark NA for this item.)	459.9549(1)	
iii. Does the Revalidation reflect current Process Safety Information?	459.95496	
iv. Does the Revalidation reflect current Standard Operating Procedures?	459.95498	
v. Does the Revalidation reflect the current Training Program?	459.95498	
vi. Does the Revalidation reflect the current Maintenance Program?	459.95498	
vii. Does the Revalidation reflect the current Emergency Response Program?	459.95498	
viii. Does the Revalidation consider incidents that occurred after the prior PHA?	459.955(1)	
ix. Has Revalidation team ensured that all recommendations from Incident Investigations have been implemented or are scheduled to be completed as soon as possible?	459.955(2)	
x. If deficient program elements were the cause of the incidents, have those deficiencies been corrected?	459.955(3)	
<b>b. Potential Enhancements to Facility Program</b>		<b>Resp. Code</b>
i.		
Notes/Comments Pertaining to Responses to Questions under Issue 8):		



**General Records Audit/Review Notes/Comments:**

A large, empty rectangular box with a double-line border, intended for handwritten or typed notes and comments regarding the audit or review process.



<b>B. ON-SITE INSPECTION</b>	
<b>1) VERIFY THAT PHA IS ONSITE, ACCESSIBLE AND CURRENT</b>	<b>Resp. Code</b>
a. Is the PHA on site and available to employees?	
b. Are PHA worksheet copies available in the process area(s)?	
c. Does it appear that PHA worksheet copies have been reviewed by operating employees?	
d. Does it appear that PHA has been used to assist in the training of operating employees?	
Notes/Comments Pertaining to Responses to Questions under Issue1):	
<b>General On-Site Inspection Notes/Comments:</b>	



<b>C. INTERVIEWS</b>			
<p>1) <b>SELECT TWO OR MORE OPERATING PERSONNEL TO INTERVIEW REGARDING THE EFFECTIVENESS OF SOP'S USING THE FOLLOWING QUESTION SETS.</b>                      (RESPONSES ARE TO BE LOGGED ON FOLLOWING PAGES.)</p>			
Question Set	Question Options/Phrasing		
<b>a</b>	What is your responsibility?		
<b>b</b>	Did you participate in the PHA sessions?		
<b>c</b>	Were you provided an opportunity to comment on the PHA?		
<b>d</b>	Was the PHA used in any of your training sessions?		
<b>e</b>	How was the PHA study presented to you?		
<p>2) <b>RECORD RESPONSES OF SELECTED OPERATING OR MAINTENANCE PERSONNEL TO QUESTIONS FROM THE QUESTION SETS (LISTED UNDER ITEM NO. 1)</b></p>			
<b>Employee Profile</b>			
Job Title/Position	Department/Unit/Group	Yrs in Job	Yrs w/Co.
<p><b>Response to Question Set _:</b></p>          			
<p><b>Response to Question Set _:</b></p>          			



**Response to Question Set \_:**

**Response to Question Set \_:**

**Response to Question Set \_:**