

III. Process Hazard Analysis Program
Nevada Division of Environmental Protection
Chemical Accident Prevention Program
Element Audit Checklist

Revision 3, 03/12/09



Facility:	Process(es) Covered:	Date:	
A. PROCEDURE/POLICY REVIEW			
1) EXISTENCE, COMPLETENESS OF PHA		Percentage Completion Score – Total 100% (Weighting of Elements is Defined Below)	
Overall NDEP-CAPP Element Audit Checklist Score for Process Hazard Analysis Program (as evaluated in sections 2 through 9 below)		%	
Notes/Comments Pertaining to Responses to Questions under Issue 1):			
2) INFORMATION PERTAINING TO PHA TIMING		NAC Ref.	Resp. Code
<i>Item #2 Completion Score – Weighted 5% of Total</i>		%	
i. Was the PHA completed before introducing HHS or explosives into the process?		459.95414(1)	
ii. If reviewed PHA was a revalidation, was it completed within 5 years of previous PHA		459.95414(9)	
iii. Was the relevant Process Safety Information compiled and verified prior to conducting the PHA? <i>Refer to PSI Compilation Checklist on Data Form</i>		459.95412(1)	
Notes/Comments Pertaining to Responses to Questions under Issue 2):			

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3) INFORMATION PERTAINING TO PHA METHODOLOGY	NAC Ref.	Resp. Code
<i>Item 3 Completion Score – Weighted 5% of Total</i>	%	
i. Was the PHA methodology approved by CAPP staff prior to proceeding, and was that methodology used by the facility?	459.95414(3)	
ii. Was the PHA methodology selected from the options provided in regulation?	459.95414(4)	
Notes/Comments Pertaining to Responses to Questions under Issue 3):		
4) INFORMATION PERTAINING TO PHA PERFORMANCE	NAC Ref.	Resp. Code
<i>Item 4 Completion Score – Weighted 35% of Total</i>	%	
i. Have all portions of the regulated process been included in the PHA?	459.95414(1)	
ii. Has a list of previous accidents and near-misses been developed for consideration by the PHA team?	459.95414(5b)	
iii. Have previous accidents and near-misses been considered by the team when conducting the PHA?	459.95414(5b)	
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(5a)	
v. Do potential hazards appear to have been identified?	459.95414(5a)	
vi. Does Consequence of Hazard reflect failure of Engineering and Administrative Controls?	459.95414(5d)	
vii. Has impact of failed Engineering and Administrative Controls been considered when defining the Severity of the Consequence of the identified Hazards?	459.95414(5d)	

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viii.	Is Consequence of Hazard brought to completion and does it reflect Safety and Health effects when those effects are possible?	459.95414(5g)	
ix.	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(5c)	
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) and include consideration of the facility siting items listed under “a” through “f” below?	459.95414(5e) 459.95414(6b)	
a.	Does the PHA consider issues such as location of the facility, spacing of process equipment in relationship to non-process operations; spacing between equipment and spacing between equipment and potential sources of ignition?	459.95414(5e) 459.95414(6b)	
b.	Were recognized spacing standards and building evaluation standards (i.e. API, NFPA, Equipment Vendors Manuals, AIChE, Industrial Risk Insurers or Chemical Industries Association) considered in the PHA?	459.95414(5e) 459.95414(6b)	
c.	Does the PHA consider accessibility of response vehicles?	459.95414(5e) 459.95414(6b)	
d.	Is the proximity between delivery vehicles and process equipment and piping considered in the PHA?	459.95414(5e) 459.95414(6b)	
e.	Does the PHA consider the impacts of catastrophic releases on employees, the public and environmental receptors?	459.95414(5e) 459.95414(6b)	
f.	Is the adequacy of hazardous area classifications considered in the PHA	459.95414(5e) 459.95414(6b)	
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) and include consideration of the human factors listed under “a” through “d” below?	459.95414(6a)	
a.	Has the ability of operators to comprehend the language in which procedures are written been considered in the PHA?	459.95414(5f)	
b.	Has the impact of the level of staffing been considered in the PHA?	459.95414(6a)	
c.	Does the PHA consider whether operators are able to observe instruments from the locations at which they must make adjustments to process equipment?	459.95414(5f)	
d.	Does the PHA consider whether controls panels and digital displays are easily understood and correspond with the P&ID’s?	459.95414(6a)	
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 “a” through “h” below?	459.95414(6c)	
a.	Earthquake. Does structural design meet the appropriate seismic design criteria? Are pipelines, supports and equipment properly anchored or guided to withstand earthquakes?	459.95414(6c)	
b.	High Winds. Is the process and associated buildings properly designed to withstand wind loads?	459.95414(6c)	

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c.	Lightning and Static Electricity. Is the process adequately grounded from lightning strikes and adequately grounded or bonded to prevent sparking or arcing?	459.95414(6c)	
d.	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(6c)	
e.	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(6c)	
f.	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(6c)	
g.	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(6c)	
h.	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(6c)	
Notes/Comments Pertaining to Responses to Questions under Issue 4):			
5) INFORMATION PERTAINING TO THE TEAM CONDUCTING THE PHA		NAC Ref.	Resp. Code
<i>Item 5 Completion Score – Weighted 5% of Total</i>		%	
i.	Did the team conducting the PHA have:	459.95414(7)	
a.	Member(s) with expertise in engineering and process operations? <i>Refer to Data Form</i>	459.95414(7)	
b.	Member(s) with knowledge specific to the process being evaluated? <i>Refer to Data Form</i>	459.95414(7)	
c.	Member(s) with knowledge in the specific PHA methodology being employed? <i>Refer to Data Form</i>	459.95414(7)	

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d. At least two team members? <i>Refer to Data Form</i>		459.95414(7)	
Notes/Comments Pertaining to Responses to Questions under Issue 5):			
6) INFORMATION PERTAINING TO PHA RECOMMENDATIONS	NAC Ref.	Resp. Code	
<i>Item 6 Completion Score – Weighted 15% of Total</i>	%		
i. Has the owner or operator promptly evaluated the PHA recommendations and determined a course of action?	459.95414(8a) 459.95414(8b)		
ii. If a decision has been made to not address a proposed Recommendation, is the reason justified and documented?	459.95414(8b)		
iii. Is the resolution of each Recommendation scheduled?	459.95414(8c)		
iv. Do the Recommendations appear to be scheduled for completion as soon as possible?	459.95414(8d)		
v. Is completion of the Recommendations being documented?	459.95414(8d)		
vi. Does the onsite documentation for PHA recommendations include those items submitted with the annual registration?	459.95414(8d)		
vii. Is there documented evidence that PHA recommendations and subsequent actions are being shared with operating, maintenance or other affected employees?	459.95414(8e)		
Notes/Comments Pertaining to Responses to Questions under Issue 6):			

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7) INFORMATION PERTAINING TO PHA REVALIDATION	NAC Ref.	Resp. Code
<i>Item 7 Completion Score – Weighted 5% of Total</i>	%	
i. If an existing PHA was revalidated, was the revalidated PHA brought into compliance with sections 1 through 7 above?	459.9549(1)	
ii. If an existing PHA was revalidated, does the revalidation comply with:	459.9549(1)	
a. Does the Revalidation reflect current Process Safety Information & offsite consequence analysis? (There must be documentation indicating how the accuracy was validated)	459.95496	
b. Does the Revalidation reflect current Standard Operating Procedures? (There must be documentation indicating how the accuracy was validated)	459.95498	
c. Does the Revalidation reflect the current Training Program? (There must be documentation indicating how the accuracy was validated)	459.95498	
d. Does the Revalidation reflect the current Maintenance Program? (There must be documentation indicating how the accuracy was validated)	459.95498	
e. Does the Revalidation reflect the current Emergency Response Program? (There must be documentation indicating how the accuracy was validated)	459.95498	
f. Does the Revalidation consider incidents that occurred after the prior PHA?	459.955(1)	
g. 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)	
h. If deficient program elements were the cause of the incidents, have those deficiencies been corrected?	459.955(3)	
Notes/Comments Pertaining to Responses to Questions under Issue 7):		

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8) MANAGEMENT PLAN AND DOCUMENT CONTROL	NAC Ref.	Resp. Code
<i>Item 8 Completion Score – Weighted 5% of Total</i>	%	
i. Is there a site-specific plan that addresses how the PHA requirements will be developed and maintained, including:	459.95341	
a. Document the names of person(s) who are members of the team with overall responsibility for the development, implementation and integration of the Process Hazard Analysis Program Requirements?	459.95341	
b. How is facility program monitored for compliance with NAC 459.95414, CAPP Process Hazard Analysis Program?	459.95341	
c. How the PHA Team Leader, the scribe, and the other PHA Team Members are selected?	459.95341	
d. Who is responsible for selecting the PHA methodology to be used and obtaining NDEP-CAPP approval of the methodology prior to beginning the PHA?	459.95341	
e. How is PSI verified?	459.95341	
f. Who evaluates recommendations?	459.95341	
g. How are recommendations tracked?	459.95341	
h. How recommendations are shared with affected employees?	459.95341	
i. Who documents the PHA report?	459.95341	
ii. Is there a site-specific policy or procedure that addresses how PHA documentation is controlled to ensure that the most current information is in circulation and use?	459.95341	
Notes/Comments Pertaining to Responses to Questions under Issue 8):		

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9) VERIFICATION OF PHA PROGRAM IMPLEMENTATION	NAC Ref	Resp. Code
<i>Item #9 Completion Score – Weighted 25% of Total</i>	%	
i. Is the PHA on site and readily available to employees <i>Refer to Part B-1(a)</i>	459.95414(8d)	
ii. Have PHA recommendations been implemented as indicated in the PHA tracking log? <i>Refer to Part B-1(b)</i>	459.95414(8e)	
Notes/Comments Pertaining to Responses to Questions under Issue 9):		
General Records Audit/Review Notes/Comments:		

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B. ON-SITE INSPECTION		
1) VERIFY THAT PHA IS ONSITE, ACCESSIBLE TO EMPLOYEES AND THAT RECOMMENDATIONS ARE BEING IMPLEMENTED	NAC Ref.	Resp. Code
a. Is the PHA on site and available to employees?	459.95414(8d)	
b. Have PHA recommendations been implemented as indicated in the PHA tracking log?	459.95414(8e)	
Notes/Comments Pertaining to Responses to Questions under Issue 1):		
General On-Site Inspection Notes/Comments:		



C. INTERVIEWS

1) SELECT TWO OR MORE PERSONNEL TO INTERVIEW REGARDING THE EFFECTIVENESS OF THE INCIDENT INVESTIGATION PHA PROGRAM USING THE FOLLOWING QUESTION SETS

Responses are to be Logged on Following Pages:

Question Set	Questions to Consider
a	What is your job description and associated tasks?
b	Did you participate in the PHA sessions?
c	Were you provided an opportunity to comment on the PHA?
d	Was the PHA used in any of your training sessions?
e	How were the PHA study and recommendations presented to you?

2) RECORD RESPONSES OF SELECTED PERSONNEL TO QUESTIONS FROM THE QUESTION SETS

Refer to Part C-1

Employee Profile

Job Title/Position	Department/Unit/Group	Time in Job	Time w/Co.

Response to Question Set _: