

**IV. Standard Operating Procedures Program**  
**Nevada Division of Environmental Protection**  
**Chemical Accident Prevention Program**  
**Element Audit Checklist**

Revision 5, 09/09/2016



<b>Facility:</b>	<b>Process(es) Covered:</b>			<b>HHS(s):</b>		
<b>Completion Score History</b>	<b>Date</b>		<b>Part A Score</b>		<b>Part B Score</b>	
	xx/xx/xxxx		xx%		xx%	
<b>A. PROCEDURE/POLICY REVIEW</b>						
<b>Documents Reviewed</b>						
<b>Date Reviewed</b>	<b>Title of Document</b>			<b>Rev. #</b>	<b>Date</b>	<b># Pgs.</b>
<b>1) EXISTENCE OF SOPs ADDRESSING SPECIFIC OPERATING PHASES</b>				<b>NAC Ref.</b>	<b>Resp. Code</b>	
<i>Item #1 Completion Score – Weighted 25% of Part A</i>				<i>x / 7 = xx%</i>		
i.	Do SOPs include steps for Initial Start-Up or Commissioning? This applies for new processes or modified processes that require unique activities for the first startup only (examples: chemical cleaning, line flushing, loop checks, process lineups unique to the initial startup).			459.95416(2a1)		
ii.	Do SOPs include steps for Normal Operations (i.e. steady state operations, including monitoring and sampling requirements)?			459.95416(2a2)		
iii.	Do SOPs include steps for Temporary Operations (examples: operating a system in manual control rather than automatic during maintenance or calibration activities; operating with select pieces of equipment out of service during maintenance activities)?			459.95416(2a3)		
iv.	Do SOPs include steps for Emergency Shut-Downs, or ESD, (i.e. under conditions necessitating shutdown in a more rapid manner than a normal, or controlled, shutdown) and does it include the applicable items noted in questions a through c below?			459.95416(2a4)		
a.	Does ESD procedure identify conditions under which a shutdown will occur automatically, provide a description of resulting actions and identify operator responsibilities?			459.95416(2a4)		
b.	Does ESD procedure identify conditions under which an ESD must be initiated manually and identify operator responsibilities?			459.95416(2a4)		
c.	Does ESD procedure specify assignment of shutdown responsibility to qualified operators?			459.95416(2a4)		
v.	Do SOPs include steps for Emergency Operations (examples: operation when key pieces of equipment, such as a pump, fail; operation when a critical utility, such as cooling water or instrument air, fails)?			459.95416(2a5)		
vi.	Do SOPs include steps for Normal Shut-Down and does it include the applicable items noted in questions a through b below?			459.95416(2a6)		

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a.	Do SOPs include steps for Normal Shut-Down for a Turnaround (i.e. controlled shutdown which includes unit depressurizing, draining and isolation)?		459.95416(2a6)	
b.	If a system can be shutdown and placed in a standby mode (i.e. not drained and isolated), does an SOP include steps for this operation?		459.95416(2a6)	
vii.	Do SOPs include steps for Start-Up following the scenarios noted in questions a through c below?		459.95416(2a7)	
a.	Do SOPs include steps for Start-Up following a Turnaround (which includes system tightness checking, purging, isolation blind removal)?		459.95416(2a7)	
b.	Do SOPs include steps for Start-Up following an ESD?		459.95416(2a7)	
c.	Do SOPs include steps for Start-Up after a system is put in standby mode (i.e. a warm startup, which assumes, that the process has not been drained or mechanically and electrically isolated)?		459.95416(2a7)	
<b>Notes/Comments Pertaining to Responses to Questions under Issue 2):</b>				
<b>2) INCLUSION OF OPERATING LIMITS IN SOPs</b>			<b>NAC Ref.</b>	<b>Resp. Code</b>
<i>Item #2 Completion Score – Weighted 10% of Part A</i>			<b>x / 3 = xx%</b>	
i.	Do SOPs include Operating Limits for appropriate variables?		459.95416(2b)	
a.	Pressure?		459.95416(2b)	
b.	Temperature?		459.95416(2b)	
c.	Flow?		459.95416(2b)	
d.	Level?		459.95416(2b)	
e.	Concentration?		459.95416(2b)	
f.	Other variables?		459.95416(2b)	
ii.	Does each Operating Limit define the consequence of deviation from that limit?		459.95416(2b1)	

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iii.	Does each Operating Limit define steps or actions required to correct or avoid deviation from that limit?	459.95416(2b2)	
<b>Notes/Comments Pertaining to Responses to Questions under Issue 2):</b>			
<b>3)</b>	<b>INCLUSION OF SAFETY &amp; HEALTH (S&amp;H) CONSIDERATIONS</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
<i>Item #3 Completion Score – Weighted 10% of Part A</i>		$x / 6 = \mathbf{xx}\%$	
i.	Does S&H data include properties of, and hazards presented by, chemicals used in process?	459.95416(2c1)	
ii.	Does S&H data include precautions, such as Engineering Controls, Administrative Controls, and personal protective equipment (PPE) necessary to prevent exposure?	459.95416(2c2)	
iii.	Does S&H data include control measures to be taken if physical contact or airborne exposure occurs?	459.95416(2c3)	
iv.	Does S&H data include quality control for raw materials?	459.95416(2c4)	
v.	Does S&H data include control of hazardous chemical inventory levels?	459.95416(2c5)	
vi.	Does S&H data include any special or unique hazards?	459.95416(2c6)	
<b>Notes/Comments Pertaining to Responses to Questions under Issue 3):</b>			
<b>4)</b>	<b>INCLUSION OF SAFETY SYSTEMS AND THEIR FUNCTIONS IN THE SOPs</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
<i>Item #4 Completion Score – Weighted 10% of Part A</i>		$x / 1 = \mathbf{xx}\%$	
i.	Is Safety System Description, SSD, included as a specific SOP, or as an addendum, in SOP manual, and does it include applicable portions of items a through k below?	459.95416(2d)	
a.	Emergency Shut-Down System?	459.95416(2d)	
b.	Toxic Gas Sensors?	459.95416(2d)	
c.	Combustible Gas Sensors?	459.95416(2d)	

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d. Flame Detectors?		459.95416(2d)	
e. Firewater System?		459.95416(2d)	
f. Emergency Generator?		459.95416(2d)	
g. Uninterruptible Power Supply (UPS)?		459.95416(2d)	
h. Flare System, Incinerator or Vent Scrubber?		459.95416(2d)	
i. Audible or Visual Alarms?		459.95416(2d)	
j. Building Ventilation System?		459.95416(2d)	
k. Other Safety Systems (list below)?		459.95416(2d)	
<b>Notes/Comments Pertaining to Responses to Questions under Issue 4):</b>			
<b>5) CONSISTENCY WITH PSI and PROCEDURE CLARITY</b>		<b>NAC Ref.</b>	<b>Resp. Code</b>
<i>Item #5 Completion Score – Weighted 10% of Part A</i>		$x / 2 = \mathbf{xx}\%$	
i. Do the SOPs appear to cover operation of the equipment and instruments defined in PSI?		459.95416(1a)	
ii. Do written SOPs appear to provide clear instructions in a language understood by all operating personnel?		459.95416(1b)	
<b>Notes/Comments Pertaining to Responses to Questions under Issue 5):</b>			
<b>6) EXISTENCE OF SAFE WORK PRACTICES</b>		<b>NAC Ref.</b>	<b>Resp. Code</b>
<i>Item #6 Completion Score – Weighted 25% of Part A</i>		$x / 6 = \mathbf{xx}\%$	
i. Has a Hot Work procedure with permit system been developed and does the permit document:		459.95433	

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a.	That the fire prevention and protection requirements in 29CFR1910.252(a) are implemented before beginning hot work?	459.95433	
b.	Permit authorization prior to conducting hot work activity?	459.95433	
c.	Indication of object upon which hot work is to be performed and the date(s) of the hot work authorization?	459.95433	
ii.	Does a Lock-Out/Tag-Out procedure exist?	459.95416(3d1)	
iii.	Does a Confined Space Entry procedure exist?	459.95416(3d2)	
iv.	Does a Process Equipment Opening and Line Breaking procedure exist that includes direction for depressurizing, draining and purging?	459.95416(3d3)	
v.	Has a procedure for Controlled Access into a facility by maintenance, contractor, laboratory or other support personnel been developed?	459.95416(3d4)	
vi.	If other Safe Work Practices have been defined, has the procedure been developed?	459.95416(3d5)	
<b>Notes/Comments Pertaining to Responses to Questions under Issue 6):</b>			
<b>7) MANAGEMENT PLAN AND DOCUMENT CONTROL</b>		<b>NAC Ref.</b>	<b>Resp. Code</b>
<b>Item #7 Completion Score – Weighted 10% of Part A</b>		<b>x / 2 = xx%</b>	
i.	Is there a site-specific plan that addresses how the Standard Operating Procedures Program 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 Standard Operating Procedures Program Requirements?	459.95341	
b.	How it has been determined that all appropriate operating scenarios have been identified and the appropriate procedures have been developed.	459.95341	
c.	How SOPs and SWPs are written and approved (including development of operating limits, safety & health considerations and safety system description).	459.95341	
d.	How SOPs and SWPs are implemented in the plant?	459.95341	
e.	How SOPs are reviewed annually to determine if they are current and accurate?	459.95341	

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f. How the SOPs and SWPs are determined to provide clear instructions in a language understood by all operators?		459.95341	
ii. Is there a site-specific policy or procedure that addresses how SOP and SWP documentation is controlled to ensure that the most current information is in circulation and use?		459.95341	
<b>Notes/Comments Pertaining to Responses to Questions under Issue 7):</b>			
<b>General Records Audit/Review Notes/Comments:</b>			



<b>B. ON-SITE INSPECTION</b>							
<b>1) SELECT AT LEAST 1 INDIVIDUAL SOP TO VERIFY IMPLEMENTATION</b> <i>List on the Following Table:</i>				<b>NAC 459.95416</b>			
<b>Item #1 Completion Score – Weighted 30% of Part B</b>				<b>x / 4 = xx%</b>			
#	SOP ID #	Title - Purpose/Description Summary					
i							
ii							
iii							
iv							
Inquiry/Observation				Response Code :			
				i	ii	iii	iv
a. Does observation of actual practice indicate that written SOP is available and being followed (look for use of operating procedures along with checklists, monitoring forms, and sample logs)?							
b. Is PPE identified in SOP in use or otherwise readily available?							
c. Is the SOP of the most recent revision?							
d. Do equipment label or descriptions match the SOPs?							
e. Do actual Engineering Controls appear to match those identified in SOP?							
f. Do actual Administrative Controls appear to match those identified in SOP?							
g. Are alarm settings or safe operating limits that are noted in the SOPs consistent with those settings or limits posted on the unit, displayed on the DCS system or noted elsewhere on the unit?							

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h. Based on Response Codes used to complete items 'a' through 'g' above, do SOPs appear to be in use in the plant, and whether hard copy or on-line, appear to be readily accessible by personnel who work in or maintain a process?									
<b>Notes/Comments Pertaining to Responses to Questions under Issue 1):</b>									
<b>2) VERIFY THAT SSD IS COMPLETE</b>						<b>NAC Ref.</b>		<b>Resp. Code</b>	
<i>Item #2 Completion Score – Weighted 10% of Part B</i>						<b>x / 1 = xx%</b>			
i. Does SSD appear to be complete based on review of Process (Block) Flow Diagram, P&ID, and site inspection?						459.95416(2d)			
<b>Notes/Comments Pertaining to Responses to Questions under Issue 2):</b>									
<b>3) SELECT AT LEAST 1 INDIVIDUAL SWP TO VERIFY IMPLEMENTATION</b> <i>List on the Following Table:</i>						<b>NAC 459.95416(3d)</b>			
<i>Item #3 Completion Score – Weighted 30% of Part B</i>						<b>x / 4 = xx%</b>			
<b>#</b>	<b>SWP ID #</b>	<b>Title - Purpose/Description Summary</b>							
<b>i</b>									
<b>ii</b>									
<b>iii</b>									
<b>iv</b>									
<b>Inquiry/Observation</b>						<b>Response Code :</b>			
						<b>i</b>	<b>ii</b>	<b>iii</b>	<b>iv</b>
a. Does observation of actual practice indicate that written SWP is available and being followed (look for completed SWP permit forms)?									
b. Is PPE identified in SWP in use or otherwise readily available?									

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c. Is the SWP of the most recent revision?				
d. Based on Response Codes used to complete items 'a' through 'c' above, do SWPs appear to be in use in the plant, and whether hard copy or on-line, appear to be readily accessible by personnel who work in or maintain a process?				
<b>Notes/Comments Pertaining to Responses to Questions under Issue 3):</b>				
<b>4) VERIFY THAT SOPs ARE CURRENT</b>	<b>NAC Ref.</b>		<b>Resp. Code</b>	
<i>Item #4 Completion Score – Weighted 30% of Part B</i>	$x / 2 = \mathbf{xx}\%$			
i. Are SOPs being reviewed as often as necessary to assure that they reflect current operating practice? ( <i>Look for evidence of active MOC system</i> )	459.95416(3b)			
ii. Does facility staff certify annually that (Master or Original) SOPs are current and accurate? ( <i>Look for evidence of annual certification</i> )	459.95416(3b)			
<b>Notes/Comments Pertaining to Responses to Questions under Issue 4):</b>				
<b>General On-Site Inspection Notes/Comments:</b>				