



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



Facility:	Process(es) Covered:	Date:
<b>IV. STANDARD OPERATING PROCEDURES (SOPs)</b>		
<b>A. RECORDS AUDIT/REVIEW</b>		
<b>1) EXISTENCE, STRUCTURE AND FORMAT OF SOPs</b> (Refer to Data Forms for List of Applicable SOPs)		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Do written SOPs appear to exist for the covered process and/or subprocess (i.e. are Sections 2 through 9 satisfied)?	459.95416	
ii. Do written SOPs appear to provide clear and simple instructions in a language understood by all operating personnel (also refer to part C)?	459.95416(1b)	
<b>b. Potential Enhancements to Facility Program</b>		<b>Resp. Code</b>
i. Are SOP copies legible (especially if handwritten)?		
ii. Is there a specific format or structure for SOPs which distinguishes them from other facility documents (unique heading, border, etc)?		
iii. If a specific SOP format exists, is format the same for all pages of an individual SOP, ie, do all pages have same heading, title block, etc?		
iv. Do individual SOPs have ID numbers (as well as titles)?		
v. Are writers/authors and/or approving parties identified?		
vi. Were operators involved in developing or writing SOPs?		
vii. Were operators involved in reviewing SOPs?		
viii. Is revision date and/or revision sequence identified on individual SOPs?		
ix. Does each page of an individual SOP have a revision date or sequence to allow for revising and distributing a single page instead of entire SOP due to a minor change?		
x. Are pages of each SOP numbered?		
xi. Do individual SOPs clearly identify responsibilities of each operator position?		
xii. Do individual SOPs clearly identify which operators are required to conduct the procedure?		
xiii. Do individual SOP's include a statement of the procedure objective, including notation of which process or sub-process is covered?		
xiv. Do the SOPs appear to have sufficient detail in process steps to adequately cover tasks?		
xv. Are checklists, diagrams, forms, log sheets, tables, etc, included as part of individual SOPs to assist with effective implementation?		



Notes/Comments Pertaining to Responses to Questions under Issue 1):		
<b>2) EXISTENCE OF SOPs FOR SPECIFIC OPERATING PHASES</b>		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
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)?	459.95416(2a4)	
v. If existing, does ESD procedure identify conditions under which a shutdown will occur automatically or conditions under which an ESD must be initiated manually?	459.95416(2a4)	
vi. If existing, does ESD procedure specify assignment of shutdown responsibility to qualified operators?	459.95416(2a4)	
vii. 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)	
viii. 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)	
ix. If a system can be shutdown and placed in a standby mode (i.e. not drained and isolated, but capable of being restarted), does an SOP include steps for this operation?	459.95416(2a6)	
x. Do SOPs include steps for Start-Up following a Turnaround (which includes system tightness checking, purging, isolation blind removal)?	459.95416(2a7)	
xi. Do SOPs include steps for Start-Up following an ESD or 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)	



Notes/Comments Pertaining to Responses to Questions under Issue 2):

<b>3) INCLUSION OF SAFE OPERATING LIMITS IN SOPs</b>		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Do SOPs include Safe (Upper and Lower) Operating Limits?	459.95416(2b)	
ii. Do SOPs include Consequences of Deviations from the Safe Operating Limits?	459.95416(2b1)	
iii. Do SOPs include the steps or actions required to correct or avoid Deviations from Safe Operating Limits?	459.95416(2b2)	
<b>b. Potential Enhancements to Facility Program</b>		<b>Resp. Code</b>
i. Has some sort of emphasis been provided, such as highlighting, text boxes, CAUTION or WARNING headings, etc., to draw attention to the Safe Operating Limits, Consequences of Deviations, etc.?		

Notes/Comments Pertaining to Responses to Questions under Issue 3):

<b>4) INCLUSION OF SAFETY &amp; HEALTH (S &amp; H) CONSIDERATIONS IN SOPs</b>		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Has Safety & Health, S&H, information been included in the SOP manual, either as a specific section, or as a part of each procedure and does it include information in items ii through vi below?	459.95416(2c)	
ii. Does S&H data include properties of, and hazards presented by, chemicals used in process?	459.95416(2c1)	
iii. Does S&H data include precautions, such as Engineering Controls, Administrative Controls and personal protective equipment (PPE), necessary to prevent exposure?	459.95416(2c2)	
iv. Does S&H data include control measures to be taken if physical contact or airborne exposure occurs?	459.95416(2c3)	
v. Does S&H data include quality control for raw materials and control of hazardous chemical inventory levels?	459.95416(2c4) 459.95416(2c5)	
vi. Does S&H data include any special or unique hazards?	459.95416(2c6)	



Notes/Comments Pertaining to Responses to Questions under Issue 4):		
<b>5) INCLUSION OF SAFETY SYSTEMS AND THEIR FUNCTIONS IN THE SOPs</b>		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
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 iii through xiii below?	459.95416(2d)	
ii. Does SSD appear to be complete based on review of Process (Block) Flow Diagram, P&ID and/or on-site inspection?	459.95416(2d)	
iii. If process is covered by an Emergency Shut-Down System, is it discussed in the SSD?	459.95416(2d)	
iv. If the process area has Toxic Gas Sensors, are they discussed in the SSD?	459.95416(2d)	
v. If the process area has Combustible Gas Sensors, are they discussed in the SSD?	459.95416(2d)	
vi. If the process area has Flame Detectors, are they discussed in the SSD?	459.95416(2d)	
vii. If the process has a Firewater System, is it discussed in the SSD?	459.95416(2d)	
viii. If the process has an Emergency Generator, is it discussed in the SSD?	459.95416(2d)	
ix. If the process has an Uninterruptible Power Supply (UPS), is it discussed in the SSD?	459.95416(2d)	
x. If the process has a Flare System, Incinerator or Vent Scrubber, is it discussed in the SSD?	459.95416(2d)	
xi. If there are audible or visual Alarms, are they discussed in the SSD?	459.95416(2d)	
xii. If the process has an associated building Ventilation System, is it discussed in the SSD?	459.95416(2d)	
xiii. Are there other safety systems (list below)? If so, are they discussed in the SSD?	459.95416(2d)	
<b>b. Potential Enhancements to Facility Program</b>		<b>Resp. Code</b>
i. Has a plot plan been developed that illustrates the location of the various sensors, detectors and safety equipment as identified in the SSD?		
ii. Has a plot plan been developed that illustrates the fire water system layout, including header layout and pump, tank, hydrant and monitor location as identified in the SSD?		
iii. Has a single line electrical diagram been incorporated into the SSD that delineates what sources are supplied by emergency power generation?		
iv. Has a diagram or list of sources powered by the UPS system been provided, with an estimate of battery life?		
v. Has a chart been developed that describes what initiates an Emergency Shutdown and describes the subsequent actions?		



Notes/Comments Pertaining to Responses to Questions under Issue 5):

**6) COMPARISON OF SOPs TO PROCESS SAFETY INFORMATION (PSI)**

<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Do the SOPs appear to cover operation of the equipment and instruments defined in PSI?	459.95416(1a)	
ii. Do the Safe Operating Limits in the SOPs appear to be within the limits defined in PSI?	459.95416(2b)	

Notes/Comments Pertaining to Responses to Questions under Issue 6):

**7) PROCESS OPERATOR ACCESSIBILITY TO SOPs**

<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Do SOPs, whether hard copy or on-line, appear to be readily accessible by personnel who work in or maintain a process?	459.95416(3a)	
<b>b. Potential Enhancements to Facility Program</b>		<b>Resp. Code</b>
i. Are all pertinent SOPs compiled in a specific manual or binder?		
ii. Is number of hard copy sets of SOPs “controlled” with recipients designated?		
iii. Is each operator issued a “controlled” SOP?		
iv. Are actual locations where SOP’s are kept identified?		
v. Are SOPs available on-line (at computer workstations)?		
vi. If SOPs are available on-line, has a method been established for notification and review of updates/revisions?		
vii. Are “un-controlled” copies of SOPs allowed or made available?		
viii. Are “un-controlled” copies of SOPs marked or labeled as such?		



Notes/Comments Pertaining to Responses to Questions under Issue 7):

<b>8) REVIEW OF SOPs TO VERIFY THAT THEY REMAIN CURRENT AND ACCURATE</b>		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Are SOPs being reviewed as often as necessary to assure that they reflect current operating practice (also refer to responses to interviews under part C of this audit form)?	459.95416(3b)	
ii. Does facility staff annually verify that controlled SOP copies are consistent with Master/Original document?	459.95416(3c)	
iii. Does facility staff certify annually that (Master or Original) SOPs are current and accurate, and does it have a criteria for this determination such as: - annual procedure review by operators or engineers, - effective MOC procedures that ensure procedural updates, or - other method (list below)?	459.95416(3c)	

Notes/Comments Pertaining to Responses to Questions under Issue 8):

<b>9) INCLUSION OF SAFE WORK PRACTICES IN SOPs TO PROTECT EMPLOYEES &amp; CONTRACTORS</b>		
<b>a. Compliance of Facility Program with Specific Code Requirements</b>	<b>NAC Ref.</b>	<b>Resp. Code</b>
i. Has a Hot Work procedure with permit system been developed that requires: compliance with 29CFR1910.252(a), permit authorization prior to conducting hot work activity, and indication of object upon which hot work is to be performed and the date of the hot work?	459.95433	
ii. Has a Lock-Out/Tag-Out procedure with permit system been developed which contains the elements of 29CFR1910.147?	459.95416(3d1)	
iii. Has a Confined Space Entry procedure with permit system been developed which contains the elements of 29CFR1910.146?	459.95416(3d2)	
iv. Has a Process Equipment Opening/Linebreaking procedure with permit system been developed?	459.95416(3d3)	
v. Has a procedure for Controlled Access into a facility by maintenance, contractor, laboratory or other support personnel been developed and implemented?	459.95416(3d4)	
vi. Has the need for any other Safe Work Practices been evaluated?	459.95416(3d5)	



vii. If other Safe Work Practices have been defined, has the procedure with a permit system been developed?	459.95416(3d5)	
Notes/Comments Pertaining to Responses to Questions under Issue 9):		
<b>General Records Audit/Review Notes/Comments:</b>		



<b>B. ON-SITE INSPECTION</b>				
<b>1) SELECT 2 TO 4 INDIVIDUAL SOPs TO REVIEW AGAINST ACTUAL PRACTICE. LIST ON THE FOLLOWING TABLE:</b>				
#	SOP ID #	Title - Purpose/Description Summary		
i				
ii				
iii				
iv				
Inquiry/Observation				Resp. Code :
				i
				ii
				iii
				iv
a.		Does observation of actual practice indicate that written SOP is being followed (look for use of operating procedures along with checklists, monitoring forms and sample logs)?		
b.		Is equipment labeled and/or described with same title/name as used in SOP?		
c.		Do actual Engineering Controls appear to match those identified in SOP?		
d.		Do actual Administrative Controls appear to match those identified in SOP?		
e.		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?		
f.		Is PPE identified in SOP in use or otherwise readily available?		
Notes/Comments Pertaining to Responses to Questions under Issue 1):				
<b>2) VERIFY THAT SOPs ARE ACCESSIBLE AND CURRENT</b>				<b>Resp. Code</b>
a.		Does observation indicate that written SOPs are at the location(s) specified?		
b.		Does observation indicate that written SOPs are readily accessible to employees who work at or maintain process?		
c.		Is there system in use (log, sign-off sheet, etc) for employees to "check out" SOPs for review (controlled access)?		
d.		Are available written SOPs of the most recent revision?		



e. Is there evidence that written SOPs are being routinely utilized?	
f. Does degree of wear or use indicate that more frequent replacement is desirable?	
g. Is there a system in use (log, sign-off sheet, etc) to track revisions/changes?	
h. Is there a system in use (log, sign-off sheet, etc) to notify employees of revisions/changes?	
Notes/Comments Pertaining to Responses to Questions under Issue 2):	
<b>3) REVIEW OF SAFE WORK PRACTICES</b>	<b>Resp. Code</b>
a. Is there evidence that Hot Work practices are being utilized/followed (review permit system and records)?	
b. Is there evidence that Lock-Out/Tag-Out practices are being utilized/followed (review permit system and records)?	
c. Is there evidence that Confined Space Entry practices are being utilized/followed (review permit system and records)?	
d. Is there evidence that Process Equipment Opening/Linebreaking practices are being utilized/followed (review permit system and records)?	
e. Is there evidence that Control of Access practices are being utilized/followed (review permit system and records)?	
f. Is there evidence that other Safe Work Practices are being followed (review permit system and records)?	
Notes/Comments Pertaining to Responses to Questions under Issue 3):	



**General On-Site Inspection Notes/Comments:**



**C. INTERVIEWS**

1) **SELECT TWO OR MORE OPERATING PERSONNEL TO INTERVIEW REGARDING THE EFFECTIVENESS OF SOP'S USING THE FOLLOWING QUESTION SETS.**  
 (RESPONSES ARE TO BE LOGGED ON FOLLOWING PAGES.)

<b>Question Set</b>	<b>Question Options/Phrasing</b>
<b>a</b>	What is your responsibility?
<b>b</b>	Do you have your own copy of the SOPs? If not, are the SOPs readily accessible? Are the SOPs conveniently located? Is there a convenient place to review the SOP's (table, office, etc)? Are the SOPs legible or do they need to be replaced with a new set?
<b>c</b>	How do you use SOPs when performing Start-Ups? How do you use SOPs when performing controlled Shut-Downs? How do you use SOPs when performing Normal Operations? How do you use SOPs when performing Emergency Shut-Downs? How do you use SOPs when performing Emergency Operations? Are checklists or log sheets used? If so, to what extent and for what procedures? How useful are the SOPs for day to day reference?
<b>d</b>	Are the SOPs easy to follow? Do the SOPs include terms or language which is too technical or confusing to you? Do the SOPs accurately reflect how the process steps are performed?
<b>e</b>	Were you involved in developing or reviewing the present SOPs? How do you submit suggested changes or improvements to the SOPs? Have you submitted proposed SOP changes or improvements? Have any changes you've proposed been effected on the SOPs?
<b>f</b>	Are you required to review the SOPs for accuracy on a given schedule? Is the frequency for SOP review adequate? Do you review the SOPs on your own or only as part of a group review? How often does your department or workgroup review SOPs? How are you informed of revisions or changes to SOPs? Are you required, either individually or as part of a group, to review newly revised SOPs?
<b>g</b>	Are Safe Work Practices, such as Hot Work permits, Lock-Out/Tag-Out permits, Confined Space Entry permits, Linebreaking permits and/or Controlled Access, in place and being followed? Are you involved in implementing these procedures? If so, how are you involved? Are the Safe Work practices proving to be effective? Do other such Safe Work practices and policies appear to be needed?



<b>C. INTERVIEWS</b>			
<b>2) RECORD RESPONSES OF SELECTED OPERATING OR MAINTENANCE PERSONNEL TO QUESTIONS FROM THE QUESTION SETS (LISTED ON THE FIRST PAGE OF SECTION C)</b>			
<b>Employee Profile</b>			
<b>Job Title/Position</b>	<b>Department/Unit/Group</b>	<b>Yrs in Job</b>	<b>Yrs w/Co.</b>
<b>Response to Question Set _:</b>			
<b>Response to Question Set _:</b>			
<b>Response to Question Set _:</b>			



**Response to Question Set \_:**

**Response to Question Set \_:**

**Response to Question Set \_:**

**Response to Question Set \_:**