

**Questions and Answers for
Subparts H and I of Part 63**

Hazardous Organic NESHAP (HON) Equipment Leak Provisions

This set of questions and answers is being provided in response to requests for guidance on various provisions in 40 CFR Part 63, subparts H and I. The following questions and answers are based on the final rule as promulgated on April 22, 1994 and as amended on September 20, 1994, October 24, 1994, October 28, 1994, January 27, 1995, April 10, 1995, and December 12, 1995. The questions and answers are guidance intended for clarification purposes, do not constitute final agency action, and cannot be relied upon to create any rights enforceable by any party. The reader should first review the rule itself, and is reminded that the rule may be revised in the future.

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I. Applicability

Issue 1 Example of equipment in Organic Hazardous Air Pollutant (OHAP) service.

Question: Certain equipment at a synthetic organic chemical manufacturing industry chemical manufacturing process unit (CMPU), within a major source subject to the HON, contains a process stream whose OHAP concentration varies. The concentration is 10 percent for 400 hours each year and one percent for the rest of the year. This exceeds the HON threshold of five percent OHAP for 300 hours annually, but the annual average concentration is below five percent OHAP. Is this equipment subject to subpart H?

Answer: No. In order to determine applicability of subpart H, one must consider three different portions of the rule: section 63.160(a), which sets thresholds of 300 hours per year and five percent OHAP concentration; the definition of "in organic hazardous air pollutant service" in section 63.161; and the methods of determining annual average OHAP concentration in section 63.180(d). These three sections are interrelated. The "applicability" provisions of section 63.160(a) refer to equipment which is "in organic hazardous air pollutant service," and the definition says that the methods in section 63.180(d) shall be used to determine whether equipment is "in organic hazardous air pollutant service." Thus, the following sequence of questions may be helpful in evaluating whether equipment is subject to subpart H:

1. Will the OHAP concentration equal or exceed five percent for more than 300 hours per year? If not, the equipment is not subject to subpart H. See 40 CFR section 63.160(a).
2. If the OHAP concentration will equal or exceed five percent for more than 300 hours per year, is the annual average OHAP concentration at least five percent? If not, the equipment is not subject to subpart H. See 40 CFR section 63.180(d).
3. If the OHAP concentration will equal or exceed five percent for more than 300 hours per year, and the annual average OHAP concentration is at least five percent, the equipment is subject to subpart H.

This process is complex, but it is intended to assure that emission reduction efforts are focused in an appropriate manner in situations where chemical processes are not uniform throughout the year. For example, there are instances where a CMPU is reconfigured several times per year to run short campaigns of very different products. There are also instances where a CMPU is not physically reconfigured, but runs with different raw materials (or proportions of them), or under different operating conditions to produce different concentrations or purities of the same, or similar, products. In either case, the OHAP concentration at any given point in the process may differ substantially throughout the year. This raises the question whether such equipment should be subject to "equipment leaks" requirements at all, and if so, whether the requirements should apply at all times, or only at certain times. A policy decision was made to establish thresholds based on the concentration of OHAP over periods of time, and, if the thresholds are exceeded, to apply the requirements of subpart H at all times. The thresholds have been established in two different sections of subpart H and they operate separately. Thus, in order to be subject to subpart H, equipment must operate in OHAP service more than 300 hours per year and have an annual average OHAP concentration of at least five percent.

In this case, the OHAP concentration is 10 percent for 400 hours, and one percent for the rest of the year. Assuming that the CMPU operates continually (24 hours per day, 365 days per year, for a total of 8760 hours annually), the concentration is one percent for 8360 hours, and the annual average OHAP concentration may be determined as follows:

$$\text{Concentration (percent)} = 100 \left(\frac{(0.10 \times 400) + (0.01 \times 8360)}{8760} \right)$$

This gives a result of 1.4 percent, which is below the threshold five percent annual average concentration. The equipment is not subject to subpart H.

On the other hand, suppose that the CMPU was shut down during some portions of the year so that the total hours of operation were less than 8760. If the lines were not cleared of process chemicals, the hours of down time should still be counted. However, if the lines were cleared, the hours of down time do not apply toward the annual average concentration.

For example, suppose that the same CMPU described above had 1000 hours of down time in a year at times when the OHAP concentration was one percent. If the lines were not cleared, the equation above remains unchanged and the annual average concentration remains 1.4 percent. If the lines were cleared, the equation changes to:

$$\text{Concentration (percent)} = 100 \left(\frac{(0.10 \times 400) + (0.01 \times 7360)}{7760} \right)$$

and the annual average concentration is 1.5 percent, which is still below the threshold.

Issue 2 Closed-vent Systems (CVS) which are not required by the HON.

Question: Do the provisions in section 63.172 of subpart H for CVS and control devices apply to a CVS which an owner or operator voluntarily installs (e.g., on a Group 2 emission point, such as a process vent with a TRE > 4) and which is not required by the HON?

Answer: No. In section 63.172(a) it is stated that these requirements apply only to CVS and control devices "used to comply with provisions of this subpart."

II. Definitions

Issue 1 Discussion of the term "in-process storage," that was added to the definition of "surge-control vessel."

Question: The term "in-process storage" has been added to the definition of "surge-control vessel." What does this term mean?

Answer: The term "in-process storage" refers to storage of materials which have been through one or more processing steps at a CMPU subject to the HON, and which are intended to undergo additional processing steps at that CMPU. The intent of the EPA is to distinguish surge-control vessels from "storage vessels" such as those in tank farms. Storage vessels typically contain raw materials or product of a CMPU and hold that product until it is loaded into barges, rail cars, or other containers for transportation. Storage in surge-control vessels, in contrast, assists in the proper functioning of the CMPU to make a product.

Issue 2 Fused plastic as a "welded connector."

Question: According to the definition of "connector" in subpart H, section 63.161, a joined fitting that is welded completely around the circumference of the interface is not considered a connector. Some of our pipes are plastic-lined. The lengths of pipe come with flanges at the end and the plastic lining extends outward along the inner flange surface. When the sections of piping were joined, the plastic on the inner flange surfaces of the facing ends was heated and pressed together so that the two plastic surfaces fused. Tests have shown that this method of installation results in a fused plastic interface all around the circumference. Would this qualify as "welded" for purposes of the definition in section 63.161?

Answer: Yes. The term "welded" is not intended to refer exclusively to metal; it can also include fusion of plastics that serve as a barrier to contain fluids within piping. So long as the process results in a fused, continuous interface around the entire circumference, this meets the intent of the rule.

Issue 3 Liquids Dripping

Question: According to section 63.161, "liquids dripping" means any visible leakage from a seal including dripping and ice formation. At a facility on the Gulf Coast, we have process equipment that operates below ambient temperature. It is common for atmospheric moisture to condense and either trickle down the side of a pump or compressor, or freeze into a ball of ice. However, this does not mean that the equipment is leaking OHAP; it is merely the unavoidable result of running cold equipment in hot, humid air. Must we consider these trickles or iceballs to be evidence of a potential leak and conduct instrumental monitoring?

Answer: No. It is not the intent of subpart H to classify condensation of atmospheric moisture as evidence of a potential leak.

III. §63.164 Compressors

Issue Does the phrase "the seal" in §63.164 refer to the seals on the compressor side of the distance piece or "all seals."

Question: If a reciprocating compressor in HAP service is fitted with tandem seals between the compressor and the distance piece, with the space between the seals vented to a process or a control device, and with a seal between the distance piece and the

crankcase, and with the distance piece closed and vented to a process or a control device, is the crankcase vent subject to section 63.164(h) or section 63.164(I)?

Answer: The venting of the space between the tandem seals, and of the closed distance piece, to a process or to a control device meets the requirements of section 63.164(h) provided that the pressures are such that any vapor flow is to the process or control device. In this case, there is no requirement applicable to the crankcase vent unless the crankcase itself meets the applicability provisions in section 63.160(a).

IV. §63.166 Sampling Collection Systems

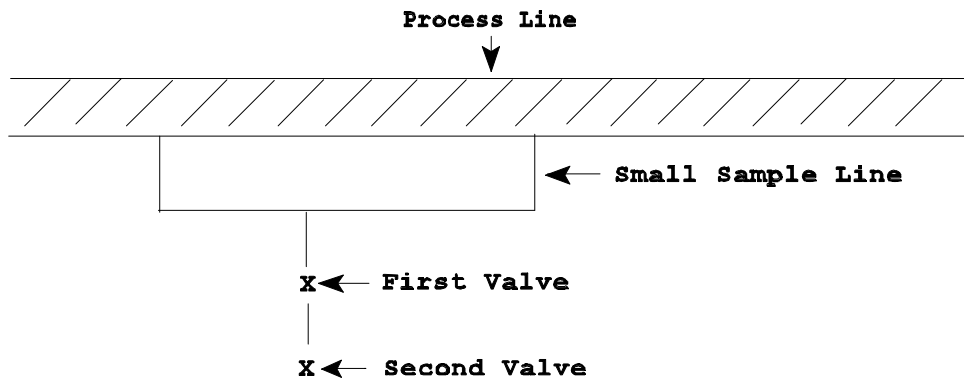
Issue 1 The use of containers to collect purged material from sampling systems.

Question: The definition of "closed-purge system" in subpart H requires covers on containers when they are not being emptied or filled. Do the containers and covers have to be gasketed, latched, inspected, etc., as described in section 63.135 of subpart G?

Answer: No, unless there is a separate basis (aside from subpart H) for applying the wastewater provisions of subpart G to the container. Subpart H does not incorporate the definition of "container" from subpart G or that subpart's wastewater provisions. Additionally, it seems highly unlikely that the containers used with closed-purge systems will exceed 0.1 cubic meter in capacity and meet the definition of container under subpart G. Containers used with closed-purge systems are only required by subpart H to have a lid or other closure which covers the opening in the container.

Issue 2 Which requirements apply to second valves in sampling systems.

Question: A process line at a HON CMPU has a sampling connection system as described in the following diagram. The process line contains a light liquid with an annual average OHAP concentration above five percent. The fluid is in the line more than 300 hours per year. The small sample line also contains the fluid more than 300 hours per year. The first valve meets the definition of an open-ended valve. A second valve was added to comply with the HON. There are no connectors; all the components are welded in place. To take a sample, we place a container under the second valve and open both valves. The initial flow of purged process fluid is collected for return to the process and then a sample is collected. The first valve is closed to allow



the line to drain and then the second valve is closed to avoid emissions or loss of process fluid. How much of the sampling connection system is subject to subpart H?

Answer: The entire sampling connection system is subject to section 63.166 of subpart H, which establishes standards for sampling connection systems. For example, section 63.166 would require the sampling connection system to be equipped with a closed-purge, closed-loop, or closed-vent system (unless an alternative means of emission limitation has been approved). Additionally, the first valve would be subject to section 63.168 (valves in light liquid service), which establishes requirements for monitoring, and to section 63.167 (open-ended valves or lines). The second valve apparently is not in OHAP service for more than 300 hours per year. If that is the case, the second valve is not subject to section 63.168 and would not have to be monitored for leaks. However, section 63.167 has standards which apply to the second valve, such as a requirement to keep the valve closed except during operations requiring process fluid flow, or during maintenance or repair. section 63.167 would also require that the first valve be closed before the second valve.

V. §63.167 Open-ended lines and Valves

Issue **Monitoring of caps and plugs on open-ended lines.**

Question: According to section 63.167, owners or operators are required (with limited exceptions) to prevent emissions from

open-ended lines by installing a cap, blind flange, plug, or a second valve. Does subpart H require periodic monitoring of all these items for leaks?

Answer: Subpart H does not require periodic monitoring of caps, blind flanges, or plugs and probably will not require monitoring of a second valve. The reasons for these answers differ, but all begin with the basic point that subpart H requires periodic monitoring only of "equipment."

1. Caps and plugs: The definition of "equipment" in section 63.161 does not include caps or plugs.

2. Blind flanges: The definition of "equipment" does not specifically mention flanges, but it does include "connectors." The term "connector" is also defined in subpart H. Many flanges are connectors; i.e., they join two pipe lines or a pipe line and a piece of equipment. However, blind flanges do not. Therefore, they are not equipment.

3. A second valve: The definition of "equipment" includes valves. However, subpart H applies only to equipment that is in OHAP service at least 300 hours in a calendar year. The EPA does not anticipate that a second valve, when used as the mechanism to prevent emissions from an open-ended line or valve, will be in OHAP service for that many hours. Thus, subpart H will probably not often require periodic monitoring when a second valve is used.

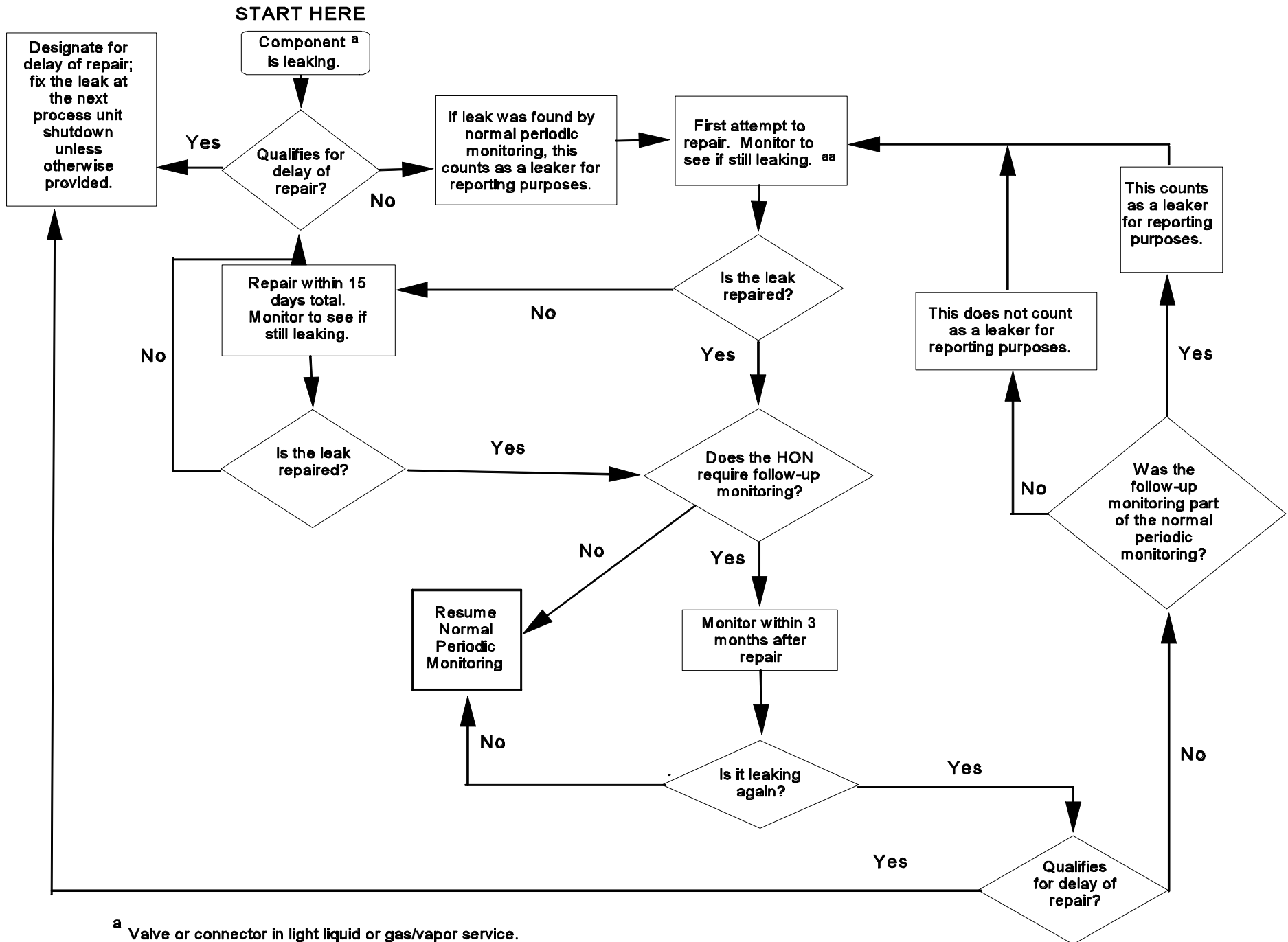
VI. §§63.168 and 63.174 Valve and Connector Monitoring

Issue 1 Follow-up Monitoring for Valves and Connectors.

Question: Some portions of subpart H require monitoring within three months after a leak is repaired. Other portions of subpart H do not require this monitoring. If we do not monitor after a leak is repaired, how will we know if the repairs are successful?

Answer: The EPA intends that all owners or operators will monitor at the conclusion of their repair efforts to verify that the repairs were successful. The three-month follow-up monitoring which is referred to is separate from that initial monitoring and serves a different purpose. The EPA has conducted studies on leak recurrence rates for some items of equipment and has found that some proportion of the equipment will resume leaking within a few months after repairs which initially appeared to be successful. The requirements for follow-up

monitoring are intended to identify those cases where the leak has resumed, so it can be repaired promptly or identified as nonrepairable. Thus, in cases where follow-up monitoring is required, the owner or operator will monitor the item of equipment more than once. The following flow diagram illustrates how subpart H is intended to operate, once a leak is detected.



^a Valve or connector in light liquid or gas/vapor service.

^{aa} Monitoring is not required if repair is determined by other means to be unsuccessful.

Issue 2 Check Valves.

Question: Do sections 63.168 and 63.169 require instrument monitoring of check valves?

Answer: No. The EPA does not consider check valves to be valves because they have no stem. There may be connectors at the points where the check valve is attached. These may meet the criteria of subpart H and be subject to the connector monitoring requirements.

VII. §63.169 Standards: Pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service

Issue Explain whether §63.169(a) requires instrumental monitoring or not. The first and second sentences in this paragraph seem to contradict each other.

Question: According to the first sentence of section 63.169(a), we must conduct instrumental monitoring within five calendar days if we find visual, audible, or olfactory evidence of a potential leak from certain equipment (such as a valve in heavy liquid service). The second sentence of section 63.169(a) says we do not have to conduct instrumental monitoring if we fix the potential leak. Please explain.

Answer: Under subpart H, "leaks" are defined by certain airborne concentrations of OHAP. Visual, audible, or olfactory evidence cannot establish the airborne OHAP concentration, and therefore will merely establish a potential leak. Consequently, section 63.169(c)(a) provides two options in situations where the owner or operator has obtained sensory evidence of a potential leak. The first option is to conduct instrumental monitoring in order to determine whether there is actually a leak or not. If there is a leak, repair is required. The second option is to simply fix the equipment, regardless of whether it is "leaking" as defined in subpart H. In that case, the EPA does not require instrumental monitoring to determine whether the equipment was leaking. Additionally, so long as the repairs eliminate the sensory indications of a potential leak or the equipment can pass a soap-bubble or pressure test, the equipment is repaired. See section 63.169(c)(3). Thus, instrumental follow-up monitoring is not required after the repairs.

VIII. §§63.181 and 63.182 Recordkeeping and Reporting

Issue 1 The listing of open-ended valves and other valves in §63.181(b)(1).

Question: A major source has a CMPU subject to subpart H. The CMPU has valves. It also has open-ended valves. When we prepare the list of equipment subject to subpart H, am I required to list "open-ended" valves separately from other valves, or may I list them all together without distinguishing which are open-ended?

Answer: You may do either. Subpart H requires a list of equipment subject to the subpart. However, subpart H does not require that open-ended valves be distinguished, on that list, from other valves.

Issue 2 Why do §§63.181© and (d) require records of instrument monitoring of equipment subject to §63.169 when that section does not require instrument monitoring?

Question: Section 63.169(a) does not require instrumental monitoring in cases where the owner or operator promptly repairs a potential leak from certain equipment. Why do sections 63.181© and (d) require records that include readings from instrumental monitoring?

Answer: Sections 63.181© and (d) are intended to address a wide variety of leak-repair situations, including situations where instrumental monitoring is conducted or where repair is delayed. The owner or operator subject to section 63.181© is required to follow the applicable portions of section 63.181(d). The owner or operator is not required to keep records specified in portions of section 63.181(d) that do not apply.

Issue 3 Recordkeeping required for CVS (§63.181(g)(2)).

Question: Owners and operators are required by section 63.181(g)(2) to retain "records of operation of closed-vent systems and control devices." There are three subparagraphs which describe specific records. Is the recordkeeping requirement limited to the records identified in the three subparagraphs, or must we retain other "records of operation" that are not specified there?

Answer: The recordkeeping requirement is limited to the records identified in the three subparagraphs. In the initial paragraph of section 63.181(g), the EPA has stated that the owner or operator "shall maintain records of the information specified in paragraphs (g)(1) through (g)(3) of this section" for CVS and control devices subject to section 63.172. Consequently, section 63.181(g)(2) does not require the retention of any records other than those specified.

Issue 4 Explain what the "next periodic report" means, with respect to subsequent groups.

Question 1: A major source has one CMPU in each of the five "groups" with staggered compliance dates for subpart H, as listed in section 63.100(k). How many "notifications of compliance status" must we submit and when are they due?

Answer: In the example given above, five different Notifications of Compliance Status would be submitted.

According to section 63.182(c)(4), the Notification of Compliance Status for the CMPU in Group 1 must be submitted no later than 90 days after October 24, 1994 (the compliance date for "Group 1" CMPUs, as provided in section 63.100(k)).

The Notification of Compliance Status for the CMPU in Group 2 must be submitted as part of the first "periodic report" that has a submission deadline at least 90 days after January 23, 1995 (the compliance date for "Group 2" CMPUs, as provided in section 63.100(k)). This is intended to assure that the owner or operator will always have at least 90 days after the compliance date for a process to prepare and submit the Notification of Compliance Status. The EPA cannot say, in advance, precisely when the periodic report will be due, because the general provisions (subpart A) allow a certain amount of flexibility for owners or operators to adjust reporting deadlines by agreement with the implementing agency. However, we can provide general clarification. For example, suppose that a source has a Group 2 CMPU, and a periodic report is due on March 1, 1995. Since this is less than 90 days after January 23, 1995, the owner or operator would not be required to submit the Notification of Compliance Status for the Group 2 process at that time. Instead, the owner or operator would wait until the next periodic report. On the other hand, suppose that a different major source has a Group 2 CMPU and the first periodic report after the Group 2 compliance date is due on May 15, 1995 (i.e., more than 90 days after January 23, 1995). In that case, the Notification of Compliance Status for the Group 2 CMPU would be due as part of that periodic report.

The same principles will apply for CMPUs in Groups 3, 4, and 5. Determine the compliance date for that group (from section 63.100(k)), then count forward 90 days. The Notification for CMPUs in that group will be due with the first periodic report that has a due date on or after the 90-day mark.

Some major sources may have CMPUs in more than one group, but not in all five. This should not make determination of the deadline for the Notification of Compliance Status any more difficult. Simply follow the principles outlined above, for each group individually. For example, assume that a major source has no CMPU in Group 1 or Group 2, but has a CMPU in Group 3. Simply identify the compliance date for Group 3 from section 63.100(k) and count forward 90 days. The Notification will be due as part of the first periodic report whose submission deadline is on or after the 90-day mark.

Question 2: Can the records required by section 63.181(d) be kept in a process unit's log book?

Answer: Subpart H does not specify that the required records must be kept in a particular book or format. Electronic records, log books, leak repair checklists, or any other format may be acceptable, so long as the records meet the rule's requirements for ready availability and are kept for the length of time specified.