

low-pressure chillers” and “non-major repair of low pressure chillers.” EPA requested comments on the proposed definitions; on whether the definitions were specific enough; whether other types of repairs should be considered; and whether the definitions were consistent with industry practices and/or terminology.

EPA received comments that questioned whether the proposed definitions of “major repairs of low-pressure chillers” and “non-major repair of low pressure chillers” were intended to apply to high-pressure and very high-pressure appliances. The commenters stated that emphasis should be placed on opening of the appliance during maintenance, service, or repair and not just repair of chillers. EPA also received several comments stating that, as proposed, the definitions would only affect repairs while ignoring maintenance and service of appliances. The commenters noted concern over the continued use of the word “repair” in the NPRM as it pertains to chillers instead of low-pressure appliances.

In the May 14, 1993, rulemaking, EPA made no distinctions between low-pressure, high-pressure, or very high-pressure appliances in defining major maintenance, service, or repair. The intent of the proposed definition of “major” and “non-major repairs of low-pressure chillers” was to provide clarity to the definition of major maintenance, service, or repair (at § 82.152) as it pertains to low-pressure chillers. EPA believes that while the intent of the NPRM was met by proposing two definitions, that this approach causes potential confusion by defining “major” and “non-major repairs of low-pressure chillers,” while only referencing major in the evacuation exemption of § 82.156(a)(1)(i); therefore, EPA is revising the definition of major maintenance, service, and repair without adding new definitions for non-major maintenance, service, and repair of different appliance pressure groups nor is the Agency singling out low-pressure chillers in defining major maintenance, service, or repair.

While EPA proposed changes that specifically addressed low-pressure chillers, the Agency received several comments requesting clarification of the definition of major and non-major repairs of high-pressure and very high-pressure appliances as they relate to the evacuation exemption as described in § 82.156(a)(1) and (a)(2). Several commenters noted that non-major maintenance, service, or repair of high-pressure and very high-pressure appliances currently can be performed at atmospheric pressure without having

to draw a deep vacuum and urged EPA to continue to allow this practice. EPA also received requests for clarification on whether or not the proposed changes affect the exceptions to the evacuation requirements for minor repairs that are not followed by evacuation of the appliance to the atmosphere. The commenters stated that the Agency’s proposal to add a definition for major repair of low-pressure chillers invalidates the exceptions for high- and very high-pressure appliances and has also prohibited oil changes on high- or very high-pressure appliances without first evacuating the appliance to the levels established in Table 1 of § 82.156.

The revisions to the proposed definition of “major” and the deletion of the proposed definition of “non-major repair of low-pressure chillers” reflect the initial intent of the NPRM to provide clarity as to what the Agency considers “major” and do not affect the evacuation exceptions for persons opening appliances (except for small appliances, MVACs, and MVAC-like appliances) established under the subparagraphs of § 82.156(a)(1) and (a)(2). The required practices established at § 82.156 require that refrigerant be evacuated (to the levels of Table 1) from the appliance prior to opening the appliance, by properly using EPA-certified recovery and/or recycling equipment, except for instances where evacuation of the appliance to the atmosphere is not to be performed after completion of the maintenance, service, or repair and such action is not considered “major” (§ 82.156(a)(1)(i)). The required vacuum levels vary depending on the type of appliance and the date of manufacture of the certified recovery/recycling equipment, as stated in § 82.156 Table 1. These evacuation requirements still hold true for all types of appliances, including HCFC-22, other high-pressure, and very high-pressure appliances.

Five commenters stated that the proposal to limit the opening requirement to a two-inch diameter for non-major repairs of low-pressure chillers is too restrictive. Several other commenters claimed that some openings in fact may be oval, rectangular, some other shape, or three or more inches wide. Additionally, there can be a difference between the nominal diameter and the actual diameter depending on what “schedule” of pipe is used thus determining the thickness of pipe walls.

EPA agrees with these commenters that a two-inch diameter is too restrictive. In response, the Agency has determined that opening requirements

should be expressed in square inches of “flow area” instead of an external circular diameter. Due to the fact that not all openings are circular, pipes are often fitted with gaskets with a variety of opening shapes. Therefore, the opening requirement for non-major maintenance, service, or repair of low-pressure appliances is not to exceed a “flow area” of four (4) square inches. The “flow area” should be interpreted to mean the most restricted opening through which refrigerant passes, therefore eliminating any confusion as to whether the definition applies to the nominal or actual pipe diameter or measurements. EPA is using the 4 in 2 as a criterion for designating a repair as “major maintenance, service, or repair” while not explicitly defining non-major or restricting the definition to low-pressure chillers as proposed.

One commenter stated that the language requiring technicians to cap or isolate openings during “non-major” repairs (of low-pressure chillers) should be revised. The commenter stated that a gas-tight cap may pose a safety risk in the case of pressure build-ups and that technicians should not be required to cap when it may be better to use a cover or plug. Additionally, this commenter believed that technicians should not be restricted to “isolation valves” when it may be better to use a blank for cases where openings cannot be covered at all times or instances when the appliance is not in use.

The Agency agrees that the proposed regulations were too prescriptive. The intent of the proposed provisions was to prevent unintentional refrigerant loss during maintenance, service, and repair procedures. However, EPA agrees that technicians must have discretion to select the safest alternative during any service procedure when no isolation valves are present. Since the regulations already allow for the isolation of appliance parts that are to be serviced, EPA has rescinded the proposed definition of non-major repair of low pressure chillers. This allows greater flexibility to technicians who service, maintain, and repair appliances, while maintaining the intent of the NPRM to reduce emissions during such service, maintenance, and repair.

EPA received comments concerning the proposed 15 minute time frame for defining non-major repair. One commenter stated that 15 minutes is too long, since a significant refrigerant loss can occur even when a technician is attempting to maintain atmospheric pressure. The commenter noted that a shorter time period would result in only “*de minimis*” releases of refrigerant. Another commenter requested