

FAQ Number 07-0031

FAQ Revision 0

FAQ Title Clarification of Miscellaneous Ignition Source Binning Issues

Plant: Harris

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**Purpose of FAQ:**

Clarification/enhancement of Ignition Source counting guidance for miscellaneous items in NUREG/CR-6850, supporting NFPA-805 Fire PRA application.

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**Is this Interpretation of guidance?**   ☒ Yes / No

**Proposed new guidance not in NEI 04-02?**   ☒ Yes / No

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**Details:**

**NEI 04-02 guidance needing interpretation (include section, paragraph, and line numbers as applicable):**

New attachment on interpretation issues

**Circumstances requiring guidance interpretation or new guidance:**

NUREG/CR-6850, Section 6.5.6

The guidance provided in NUREG/CR-6850 for Task 6, Fire Ignition Frequency, is subject to application inconsistency in the treatment of motors/pumps (Bins 14, 21, 26).

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|---------------------------------|--|
| Bin 14 (motors)                 | – “... (count) greater than 5hp ...”                                   |
|                                 | - “...may include elevator motors, valve motors, etc.”                 |
| Bin 21 (pumps)                  | – “... (do not count) below 5 hp ...”                                  |
|                                 | - “ ... large valves that include hydraulic fluid powered mechanisms.” |
| Bin 26 (ventilation subsystems) | – “... (do not count) 5 hp or less ...”                                |

And transformers:

- |        |  |
|--------|--|
| Bin 23 | – “... (count) essential service lighting transformers.”                               |
|        | - “... count wall-mounted transformers if they do satisfy other counting criteria ...” |

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- "... do not count small lighting transformers."

The diversity in wording can cause differences in how 5 hp components and how small transformers are counted.

**Detail contentious points if licensee and NRC have not reached consensus on the facts and circumstances:**

This topic has impact on the NFPA-805 pilots, non-pilots and other users of NUREG/CR-6850.

**Potentially relevant existing FAQ numbers:**

The characterization and counting of electrical cabinets for Bin 15 determination is addressed by FAQ 06-0016. HEAFs are addressed by FAQ-06-0017, and Main Control Boards are addressed by FAQ 06-0018.

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**Response Section:****Proposed resolution of FAQ and the basis for the proposal:**

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|----------------|--|
| Bin 14, 21, 26 | - Only count sources greater than 5 hp.  |
| Bin 14         | - Do not count MOV motors  |
| Bin 21         | - Count Large hydraulic actuators (> 5 hp) as pumps only if the motor is greater than 5 hp |
| Bin 23         | - Count transformers rated 45 KV <sub>a</sub> or greater                                   |

**Basis:**

The guidance proposed will provide more consistency when determining plant specific ignition frequencies while working within the bounds of the exiting data provided by the NUREG. This should facilitate the review and acceptability of the results.

The guidance for counting MOVs does not appear to be consistent with industry experience. A review of the fire events database did not identify any MOV motor fires. In addition, their inclusion would tend to dilute the fire frequency for other general motors in the plant. MOV motors typically have NEMA TENV (totally enclosed non-ventilated) enclosures and are greased lubricated. The treatment of a fire at an MOV in a fire PRA will exclusively be a non-propagating fire whose consequence would be limited to loss of only the MOV. This would generally screen on the basis of the fire frequency being equivalent to the random failure of the MOV. Therefore, it is proposed that all MOVs that involve TENV enclosures be excluded from the fire frequency counted regardless of motor rating.

There is only one bin for in-plant transformers with no size limitations. A counting threshold such as that used for motors is needed. 45 KVa is based on typical lighting transformers identified during walkdowns. These are generally about the size of a 2 drawer file cabinet.

**If appropriate, provide proposed rewording of guidance for inclusion in the next Revision:**