

**US Environmental Protection Agency**

**REGULATORY UPDATE**

**Haloo Optiooo Technical Working Conference  
New Mexico Engineering Research Institute**

**Albuquerque, New Mexico  
May 9, 1995**

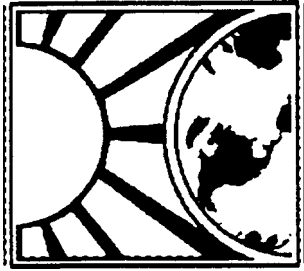
**Karen Metchis**

**Stratospheric Protection Division**



# OVERVIEW

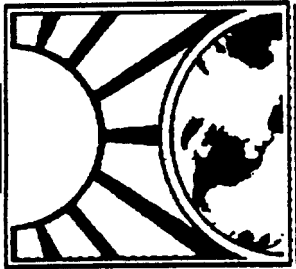
- SNAP UPDATE
- PEER REVIEW PANEL PROCESS
- HARMONIZATION OF NAP/OSHA/NFPA 2001



## SNAP UPDATE

### Federal Register Listings

1. ***Notice*** - Acceptable with no conditions or restrictions, or technical updates
2. ***Notice and Comment Rulemaking*** - Acceptable with conditions and/or restrictions; unacceptable listings
  - a) ***Notice of Proposed Rulemaking*** - (NPRM) - 45 day public comment period
  - b) ***Final Rule*** ***king*** (FRM) - includes response to public comment



# SNAP RULEMAKINGS OF THE NOTICES

## ORIGINAL SNAP RULE

May 12, 1993	58 FR 28093	Proposed Rule
March 18, 1994	59 FR 13044	Final Rule

## '94 UPDATE

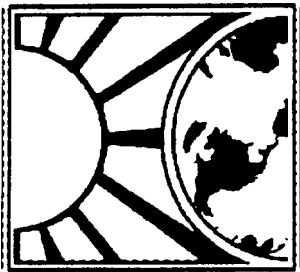
August 26, 1994	59 FR 44240	Notice
September 26, 1994	59 FR 49180	Proposed Rule
Awaiting final signature		Final Rule

## WINTER '94 UPDATE

January 13, 1995	60 FR 3318	Notice
pending		Proposed Rule

## SPRING '95 UPDATE

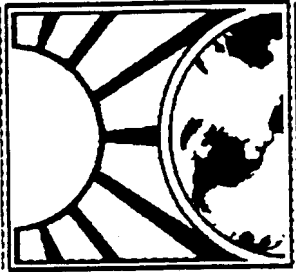
pending		Notice
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# Federal Register

## SOURCES

- **Libraries**
- **Subscriptions**
- **Government Printing Office**
- **EPA OAQPS bulletin board service (Office of Air Quality **P** and Standards, Technology Transfer Network).**
- **Internet Telnet interactive access**
- **Worldwide Web - near future**
- **Summaries available from Strat Ozone Hotline**



**TOTAL FLOODING AGENTS  
(NORMALLY OCCUPIED AREAS)**

- HFC-23 (FE 13) ○ HFC-227ea (FM 200)
- C4F10 (PFC 410) \* ○ C<sub>3</sub>F<sub>8</sub> (PFC-218 or CEA-308) \*
- HCFC BLEND A (NAF S III) ○ IG-541 (Inergen)
- 9901 (Argon) forthcoming ○ 6-55 (Dgomite) forthcoming
- Water Mist Systems with No Additives (forthcoming)
- Sulfur Hexafluoride (SF<sub>6</sub>) Discharge test agent

\* restricted use



## **TOTAL FLOODING AGENTS (NORMALLY UNOCCUPIED AREAS)**

- **CF<sub>3</sub>I (Triiodide)** ○ **HBFC-22B1 (FM100)**
- **HCFC-22** ○ **HCFC-124 (FE-241)**
- **HF<sub>2</sub>125 (FE-25)** ○ **HF<sub>2</sub>134a**
- **Powdered Aerosol (SFE)**
- **Gelled Halocarbon Dry Chem. Suspension (PGA)**
- **Inert Gas/Powdered Aerosol Blend (Olin)**



# SUMMARY OF STREAMING AGENTS

## COMMERCIAL & MILITARY USES

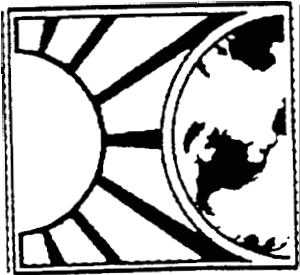
- HCFC BLEND B (Halotron I) ○ HCFC BLEND C (NAF P-III)
- HCFC BLEND D (Blitz III) ○ HCFC-125 (DuPont FE-232)
- HCFC-124 (FE-241) ○ C6F14 (3FE PFC 614) \*
- CF<sub>3</sub>I (Pending)

## RESIDENTIAL USES ALLOWED

- Gelled Halocarbon/ Dry Chemical Suspension (Powsus)

\* restricted use





**PENDING**

**TOTAL FLOODING AGENTS**

- **Water Mist Systems With Additives  
(none submitted to date)**      **Occupied Areas**
- **Powdered Aerosols  
(Tox Panel Review initiated)**      **Occupied Areas**
- **HFC Blend A (Halotron II)**      **Unoccupied Areas**

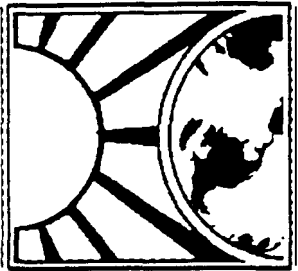
**STREAMING AGENTS**

- **HFC-227ea (FM-200)**



## PEER REVIEW PROCESS

- EPA is required to evaluate agents with toxic end uses unlike typical halocarbon agents.
- Some alternatives cannot be evaluated on the basis of cardiac sensitization.
- EPA poses questions to expert panels to evaluate likely health risks.
- Expert panels facilitate a collaborative standard setting process with industry.



## **EXPERT PANELS CONVENED TO DATE**

- **Inert Gases**
- **Water Mist (coordinated by HARC)**
- **Powdered Aerosols (coordinated by HARC)**



## **HARMONIZATION**

### **HISTORICAL DEVELOPMENT OF CURRENT STANDARDS AND REGULATIONS**

**NFPA 12a - 1971**

**based on interpretation of human studies**

**○ NIA 1910. 62 - 1980**

**adopted NFPA work**

**EPA SNAP - 1993**

**adopted OSHA standard but had to use data from animal studies**

**NFPA 2001 - 1994**

**adopted EPA SNAP approach to use conditions**



## EPA CONCERNS

### 1) Egress Requirements: Mandatory or Not?

○ SNAP rule's use conditions identical to the OSHA conditions. EPA interpreted OSHA's egress times as mandatory in workplaces.

○ Some users take issue with EPA's use conditions, and interpret OSHA's egress times only as a guideline for designing systems.

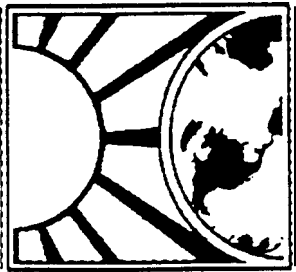
Thus accidental discharge is not treated as requiring mandatory exit.



## **EPA CONCERNS**

### **2) Exposure Limits: Cardiac Sensitization or CNS?**

- **EPA interpreted the OSHA standard as being based on halon's cardiac sensitization (CS) NOAEL/LOAEL values**
- **A review of the literature suggests it may have been based on both Central Nervous System effects (CNS) and CS.**



## **EPA CONCERNS**

### **3) PRACTICAL IMPLICATIONS**

- **EPA's conditions may be more conservative than the substitutes warrant.**
- **some users have taken EPA's conservative interpretation of OSHA, and the resultant use conditions, as indicating that the substitutes pose a significantly higher level of risk than did halon.**
- **NFPA 2001 only allows design concentration to the NOAEL because of concern that it is difficult to design to a 1 minute progress time.**
- **Contrary to EPA and OSHA workplace safety requirements, some interpret the NOAEL level as safe for indefinite exposure.**



## HARMONIZATION

### FURTHER QUESTIONS

- **What is the historical development of OSHA's 7% and 10% acceptable exposure levels?**
- **What is OSHA's opinion on how to apply toxicity data for other halocarbon substitutes?**
- **What are reasonable and practical use conditions, considering the tox data and the use scenarios?**
- **Is there a way for OSHA to interpret its regulation to require that a worker leave an area in the allotted time or must use SCBA?**





## NEXT STEPS

- EPA is requesting that everyone reexamine the historical development of halon control to ensure that errors are not propagated in future SNAP rules, NFPA 2001 standards, or other regulations.
- OSHA has agreed to work with EPA, NFPA and the user community to harmonize 1910.162 and to clarify with interpretative advisories where appropriate.

