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## *Use of Compressed Air Foam Technology to Provide Fire Protection for Electrical Fires in Sub-floors and Cable Trays*

### *Objective*

To develop a compressed air foam (CAF) distribution system for fire protection in sub-floor spaces and cable trays.

### *Background*

Recent increases in the use of computer technology have brought about a corresponding increase in the use of cabling and electrical cabinets, which can create high fuel loads in concealed spaces such as sub-floors, vertical risers and ceiling plenums. Moreover fires in these spaces can spread very rapidly. While the use of traditional sprinklers in sub-floors and cable trays raises concerns about excess water damage and water consumption, CAF could be used in such spaces if suitable distribution methods were found.

### *Progress to Date*

- Site survey to assess the fire hazard in sub-floor spaces
- Preliminary testing to study the adherence of CAF to cable bundles in cable trays
- Prototype system for the uniform application of CAF in sub-floor spaces and cable trays, including a new nozzle design
- Full-scale fire suppression experiments for cable tray fires with the prototype CAF system.

### *Work Remaining*

Analyze the full-scale test data and prepare a report

### *Expected Outcomes*

A report describing the findings of the study, including analysis of characteristics that affect the effectiveness of CAF in suppressing fires in sub-floor spaces and cable trays.

### *Partners*

FireFlex Systems Inc.

### *Start/Expected Completion Dates*

This project began in 2004 and will be completed in 2007.

### *Project Manager*

Dr. Andrew Kim, 613-993-9555; Andrew.Kim@nrc-cnrc.gc.ca

For more information, see [http://irc.nrc-cnrc.gc.ca/fr/pfdss/compressed\\_e.html](http://irc.nrc-cnrc.gc.ca/fr/pfdss/compressed_e.html)

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*A cable tray fire*