Symptom: Suction of water back from Horn 2 could not keep up with water spray rate to the horn – *water built up in the horn*

Problem: hole in suction line at ceramic electrical insulator drawing in air, reducing water suction

Repair: replace this section

Cut 2” stainless pipe here

Swage-lock fitting *disconnect here*
The challenge for repair is the residual radiation field

30 R/hr – 50 R/hr in chase around horn before horn removal

All Doserates in R/hr

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<th>O.C.</th>
<th>1 foot</th>
<th>~ 18&quot;</th>
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<td>8</td>
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Allowable ~ 1 minute per person at arms length
NuMI Horn 2 repair update
Jim Hylen - FNAL
All Exp. Mtg.
May 1, 2006
Page 3

Status: bad water-line
has been successfully replaced!

- On April 18, bad section was replaced
- Horn is back in target pile

- Tests so far:
  - Water flow now works as designed, no sign of water or air leaks
  - Hi-Pot of horn is acceptable
    - (changed deionization bottle to improve water resistivity)

- Before declaring total victory,
  want to see repair survive vibration from horn pulsing
    - Pulse test must wait for completion of installation
      of new motorized switch on 13.8 kV power
Repairs done to NuMI horn going into target pile.
Some pictures from practice

Set up temporary shielding with slot

Hydraulic Swaging of compression fitting

Cut 2” steel pipe

No chips

Note alignment jig
Job well done!

The ALARA plan estimated about 277 mrem to the repair crew including 25% for contingencies. (~ 1 mrem/second)
The job was done with a total dose of 244 mrem.

The repair team deserves recognition for a well planned, excellently executed job! The careful planning, prototyping, fabrication of special tools, and practice paid off.

Lead engineer: Vladimir Sidorov

Tech crew: Hiep Le, Cervando Castro, Keith Anderson, Willie Stitits, E. Henry Schram, Robert Albrecht, Justin Mc Vicker

RCT: Tony Busch

Plan consultants: Gary Lauten, Tony Leveling, Kris Anderson