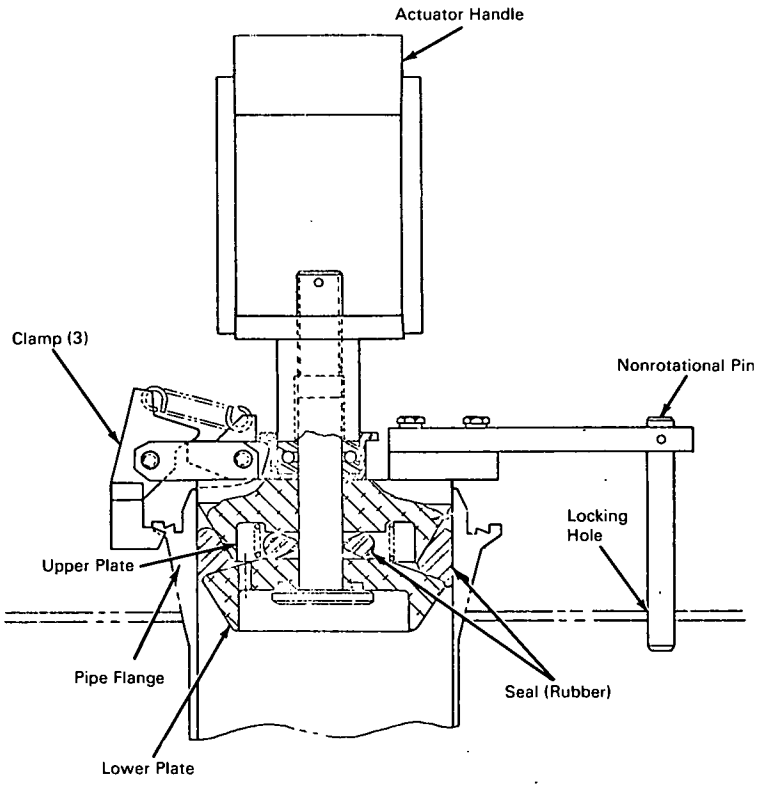
AEC-NASA TECH BRIEF

Remotely Installed Pipe Plug Provides Effective Seal in Hazardous Environment



A pipe plug was designed and fabricated for remote installation in an open-ended pipe used in a hazardous environment. The pipe plug provides a gastight seal by expanding a rubber seal against the inside surface of the pipe opening, with mechanical clamps contacting the pipe flange for positive retention of the plug.

The plug is an assembly of three functional units: the clamp/seal, a nonrotational pin, and an actuator handle. The assembly is remotely positioned by a manipulator, so that the clamp/seal is inserted into the pipe end while simultaneously, the nonrotational pin is dropped into a locking hole. When the handle is next rotated clockwise by the manipulator, two events occur. First, the three clamp shoes are drawn up to engage the pipe flange—thus locking the entire assembly to the pipe. Second, continued rotation of the handle brings the upper and lower plates together, compressing the outer seal which then expands

(continued overleaf)

radially against the inside surface of the pipe. A gas-tight seal is formed.

Notes:

1. A 5-inch pipe plug has been fabricated and tested at 75 psi for extended periods of time.
2. This device has broad application to chemical plants, oil fields, underseas operations, biological work, pressure systems, etc., where hazardous conditions dictate the use of remote manipulator techniques.
3. Inquiries concerning this device may be directed to:

   Technology Utilization Officer
   AEC–NASA Space Nuclear Propulsion Office
   U.S. Atomic Energy Commission
   Washington, D.C. 20545
   Reference: B68-10053

Patent status:

No patent action is contemplated by AEC or NASA.

Source: R. P. Clifton
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