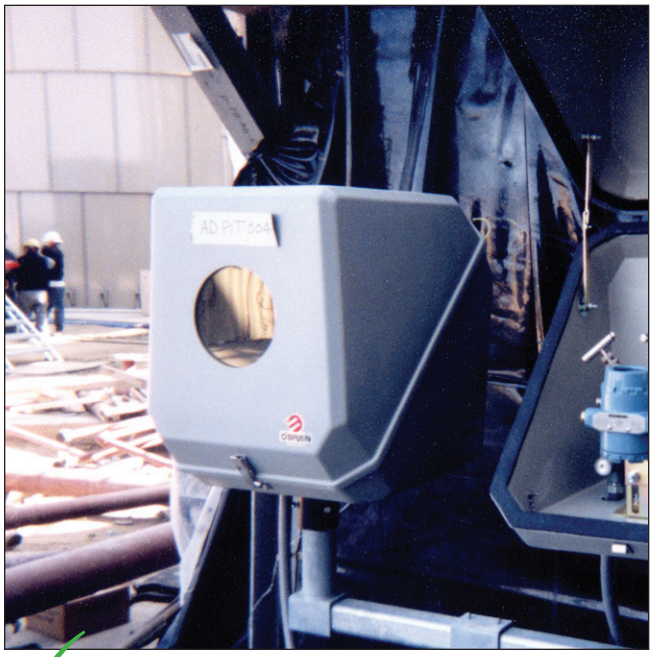
# Best Practices
# Right Way / Wrong Way

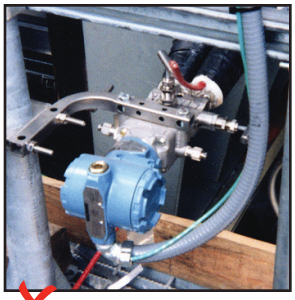
**You've just spent $100s of millions on a new plant.**
**How much will a freeze-up cost you in lost revenue and added expense?**

### Winterizing Best Practices

Most facilities are designed and constructed with very fast project time lines. Critical instrument and impulse line freeze protection details often fall to the bottom of a project priority list or pushed off to the field. Without careful considerations about each application the chances for plant freeze-ups become very likely.

As with all new construction, there are "right ways" and "wrong ways" in dealing with winterization. O'Brien Corporation is the recognized industry leader in best practices for winterizing solutions. Proper instrument enclosure and heater sizing, circuit length design, temperature control as well as terminations, weatherproofing and power supply are all areas where O'Brien and our O'BrienSERVICES™ team provide the total solution.





Insulation and freeze protection systems must be applied to the entire process wetted portion of the instrument loop. Insulating and heating the impulse lines while leaving the manifold and instrument unprotected is useless.

The ends of bundles should be sealed to prevent moisture from causing chloride stress corrosion of the stainless steel tubes. Continue the impulse line heating and insulation into the instrument enclosure.

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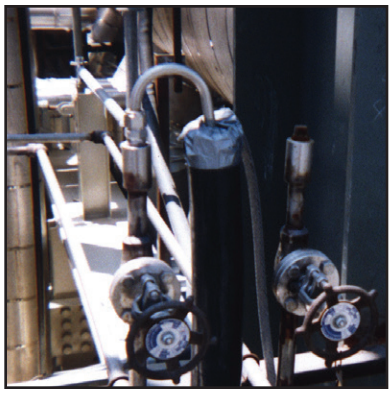
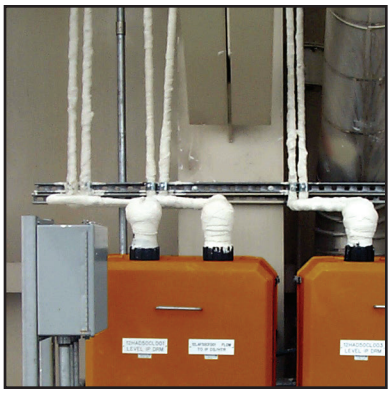
## Wrong Way:



✗ Duct tape or electricians tape do not provide adequate moisture sealing for the ends of tubing bundles.

✗ Leaving several inches of tubing exposed at a bend or at the end of a tubing bundle leaves the entire system open to freezing. Stainless steel tubing can lose more than 100°F (38°C) per inch if not insulated and traced.

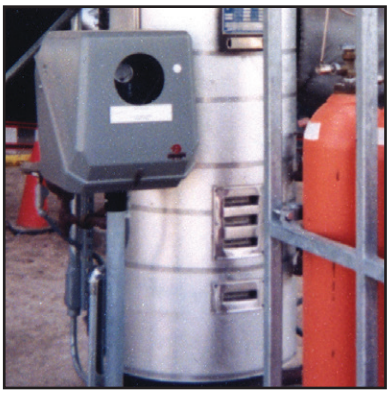


✗ Insulate and trace both legs of flow and dp transmitters together.

## Right Way:

✓ When multiple instruments are located in close proximity combine them into a single enclosure but leave enough room for normal operation and maintenance.

✓ Integrate impulse line and enclosure heater power connections.



✓ Include windows on all enclosures when the instrument has output gauges or readouts. Tag numbers placed conspicuously on the outside of the enclosure make it easier to identify instruments.

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