

Q. Further to the response to PUB-NP-066, describe the general process Newfoundland Power uses to determine each year's targets for scheduling each year's substation and relay preventive maintenance jobs.

A. Targets are developed differently for each of the types of substation equipment described in Table 1 of the response to Request for Information PUB-NP-066. The following briefly describes the individual targets and how they are determined.

Substation Inspections: Monthly inspections are based on the criticality of substations in overall electrical system operations. Target is 100% completion. In 2013, the inspection program was modified so that only one inspection was required during the July/August peak vacation period. Consequently, the current target is eleven inspections per substation per year.

Equipment oil samples: All power transformers, tap changers and bulk oil circuit breakers are sampled at least annually. Target is 100% completion. Depending on the sample results an individual unit may be sampled more frequently than annually.

Tap 4 Vibration Analysis: All tap changers in service are tested annually. Target is 100% completion.

Relay Maintenance: Relay maintenance is based upon a five year cycle. The annual target is 20% of General Electric Model Type IAC electromechanical relays in service.

Battery Maintenance: Battery banks are tested every six months. Target is 100% completion.

Thermography Inspection: Thermographic inspection of each substation is undertaken annually. Follow up scans are done as required.¹ Target 100% completion.

Portable Substation Maintenance: Portable substations are maintained annually. Target is 100% completion.

Power Transformer Maintenance: Power transformer maintenance is based upon a twelve year cycle. The annual target is approximately 8% of total power transformers.²

Breaker Maintenance: Breaker maintenance is based upon a ten year cycle. The annual target is approximately 10% of total breakers.²

¹ See the response to Request for Information PUB-NP-230.

² Power transformer maintenance is prioritized based upon condition assessment. See the response to Request for Information PUB-NP-212.