



Reuter-Stokes

a Baker Hughes business

Remote Source Verification: Theory vs Reality

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COVID-19

Impacts of COVID-19

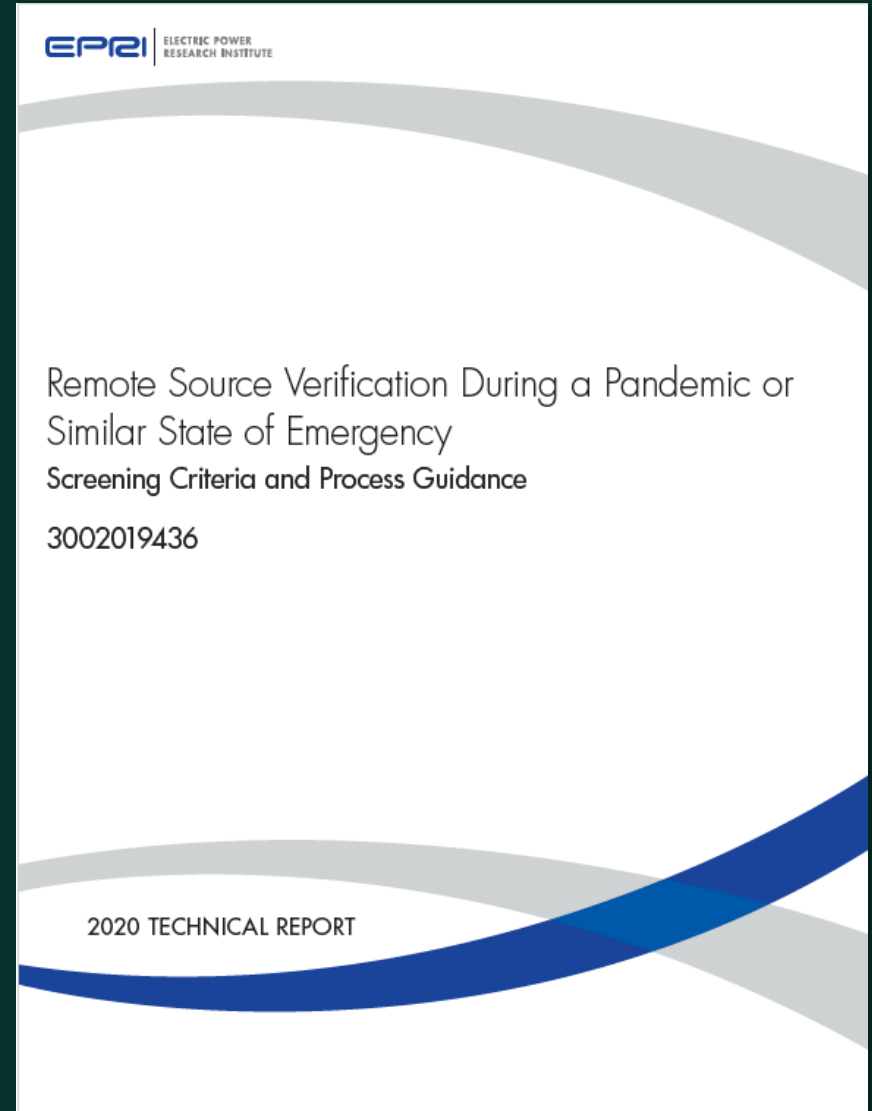
- Global health concerns
- Widespread remote working implemented
- Evolving travel restrictions by state, country

- Electric Power Industry didn't get a reprieve
- Middle of Spring Outage Season for Sonic Systems
- Reuter-Stokes was supporting ongoing plant needs

Need for a Remote Option

- EPRI Document 3002019436
- Describes screening criteria and process for Remote Source Activities
- Does not apply to audits or commercial grade surveys

- Witness specific activities with supporting objective evidence transmitted electronically
- Considerations for process and internal documentation



EPRI Document 3002019436 Highlights

- Is there an established relationship with the supplier?
- Activities to be witnessed real-time using video technology and two-way audio
- Contingency plans may be needed – pictures, alternate video means
- Internal documentation may need revised – procedural guidance and dedication plans
- Pre-approval from end-item user

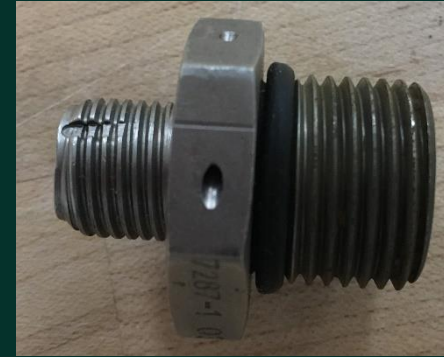
Document Guideline Approval Timeline

- EPRI Document 3002019436 issued (**April 2020**)
- Energy Northwest (ENW) submits letter to NRC to adopt document (**May/June 2020**)
- U.S. NRC approves ENW request (**July 2020**)
- Additional U.S. utilities apply for and receive approval for similar relief (**July 2020 -)**

Opportunity to use Remote Source Verification

Source Verification Activities at Reuter-Stokes

- Reuter-Stokes, located in Twinsburg, OH
- Provides multiple safety-related items to the nuclear industry
- Method 3 dedication (Source Verification) is performed on pressure/actuating cartridges (a.k.a. “squibs”)

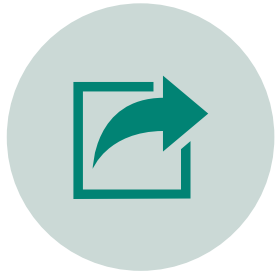


Pressure/Actuating Cartridge

Firing component used in the Traversing In-core Probe (TIP) system shear valve on BWRs

Safety Function: actuate the shear valve to isolate TIP tubing outside of containment

Typical Dedication Process for Cartridges



REUTER-STOKES (RS)
PLACES A PURCHASE
ORDER WITH THE
SUPPLIER



RS ARRANGES FOR AN IN-PERSON
WITNESSING OF FINAL TESTING AT
SUPPLIER



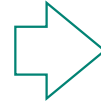
SOURCE VERIFICATION IS
ACCOMPLISHED, AND ITEMS
ARE PACKAGED AND SHIPPED
TO RS



ITEMS RECEIVED AT RS
ARE INSPECTED AND
PLACED INTO STOCK

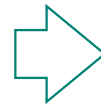
Additional Factors

This is a limited shelf-life item



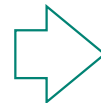
60 months from charge load date

Licensees request 70% - 80% available life prior to shipment



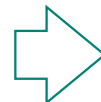
Minimal stock at RS

RS specifies time between cartridge load date and receipt inspection



No stock maintained at supplier

Typical cycle time from supplier is ~3 months



Quick turnaround not available

June 2020

RS Prepares for Source Verification

- Supplier informs RS of anticipated completion date
- RS auditor makes plans to travel to supplier site (California)
- Supplier informs RS on the day before travel to the site that there are multiple COVID-19 cases at their facility!

Visitors will not be allowed on site until further notice!

Now What?

More Questions to Think About



How long will this COVID thing last?

How do I meet regulatory requirements?

How am I going to meet customer needs?

What kind of risk am I taking if I have to send one of my team members across the country?

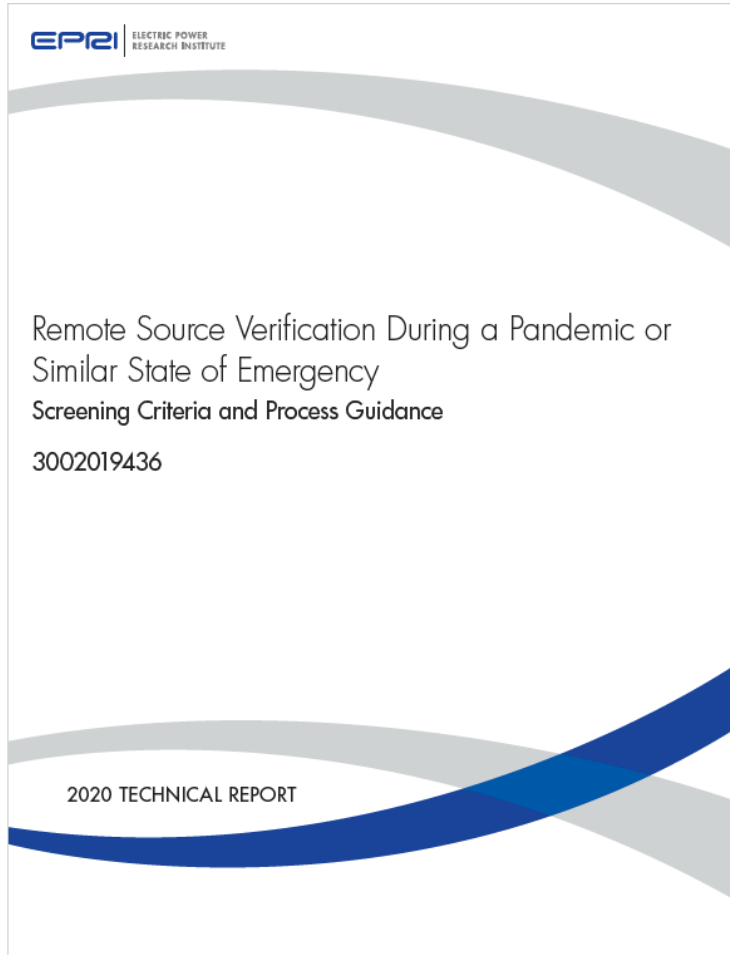
Is this going to affect plant operability?

When will the site re-open?

What if one of the key operators at site gets COVID next week?

What are my options?

Remote Source Verification



Could this be the
answer?

Flowchart – 4.1, 4.2

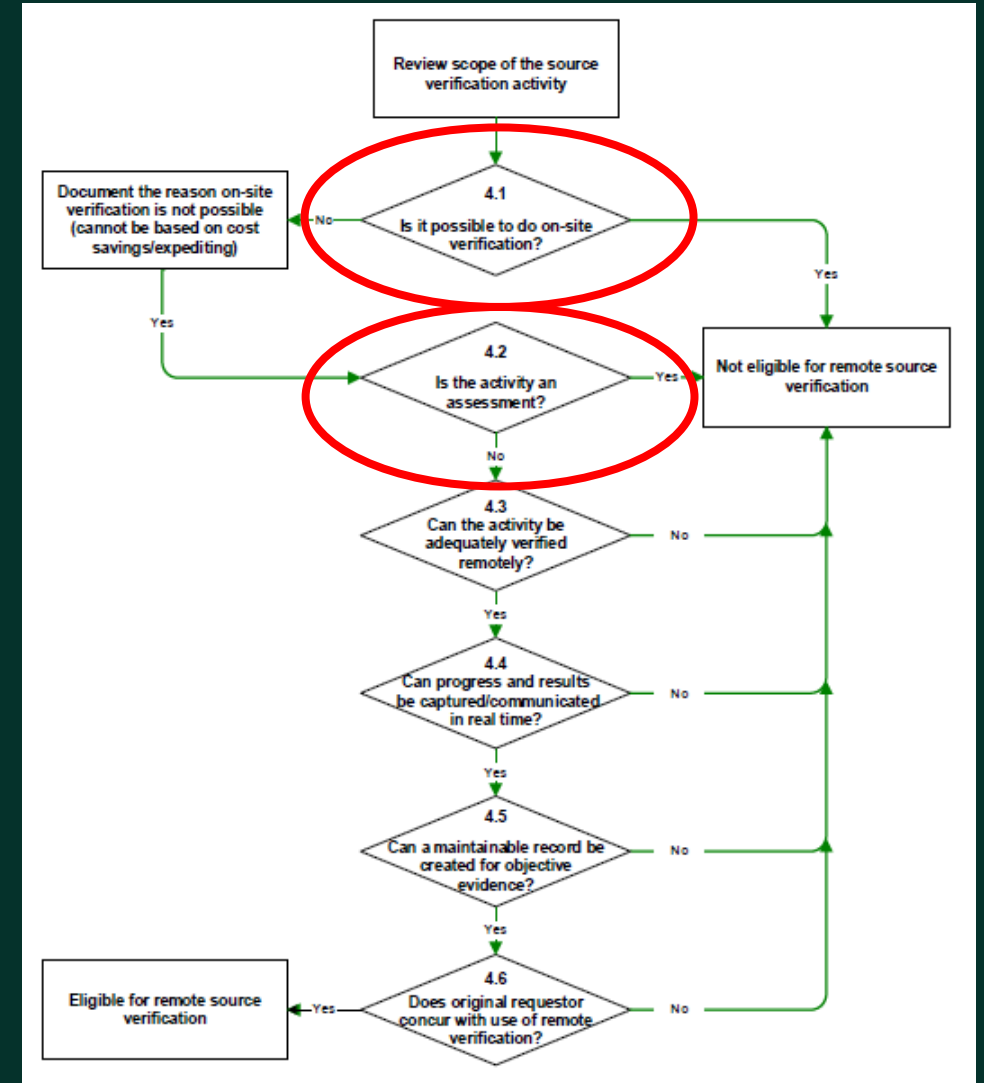
4.1 Is it possible to do on-site verification?

No. Site closed to outside visitors for an unknown amount of time.



4.2 Is the activity an assessment?

No. This is a periodic source verification.



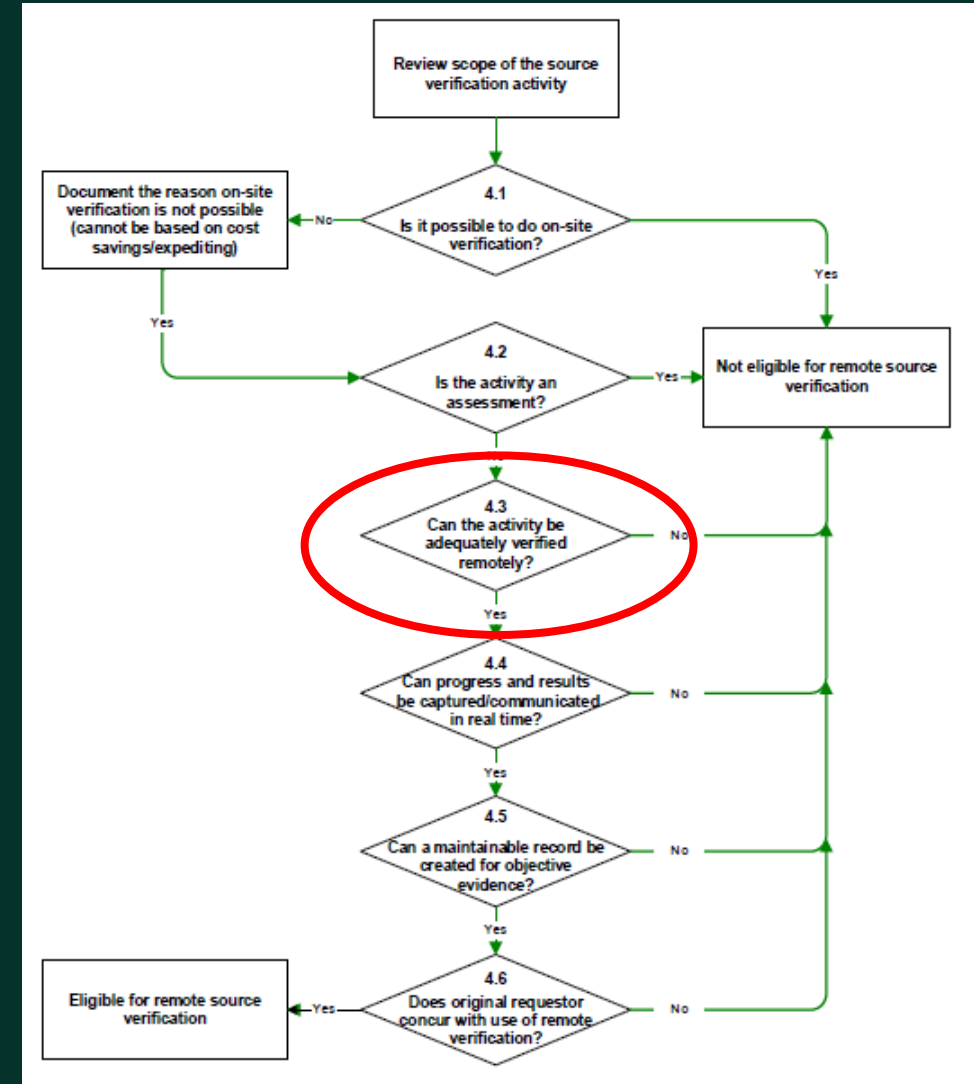
Flowchart – 4.3

4.3 Can the activity be adequately verified remotely?

Yes. The activity involves witnessing a series of electrical and destructive tests.

Other factors to consider include:

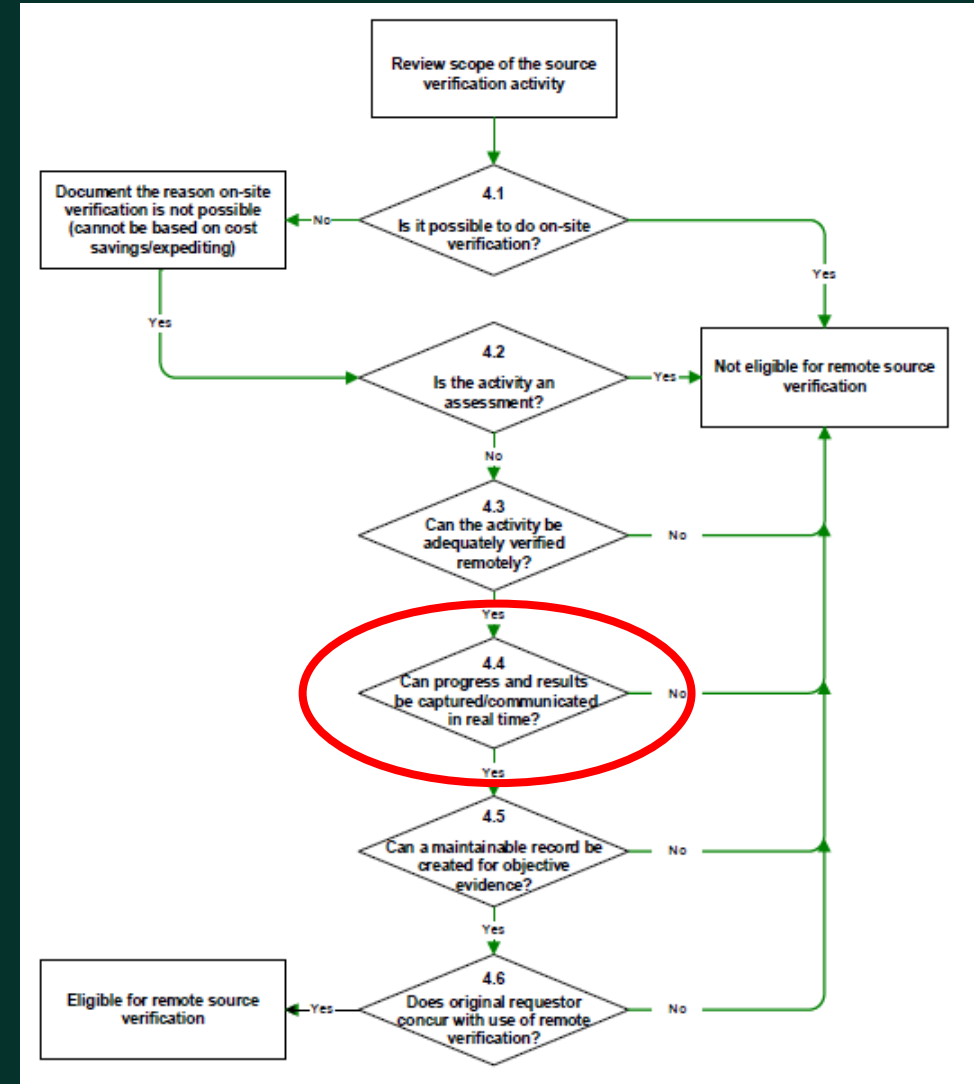
- ✓ Previous experience with the supplier
- ✓ The supplier’s capability and willingness to conduct source verification remotely
- ✓ The complexity of the activity being performed
- ✓ Ability of the supplier to implement controls to ensure successful completion and documentation of source verification



Flowchart – 4.4

4.4 Can progress and results be captured and communicated in real time?

The intent of this question is to determine if technology can be used to capture the progress and results of the activity remotely, in real time (while the activity occurs), with two-way communication.



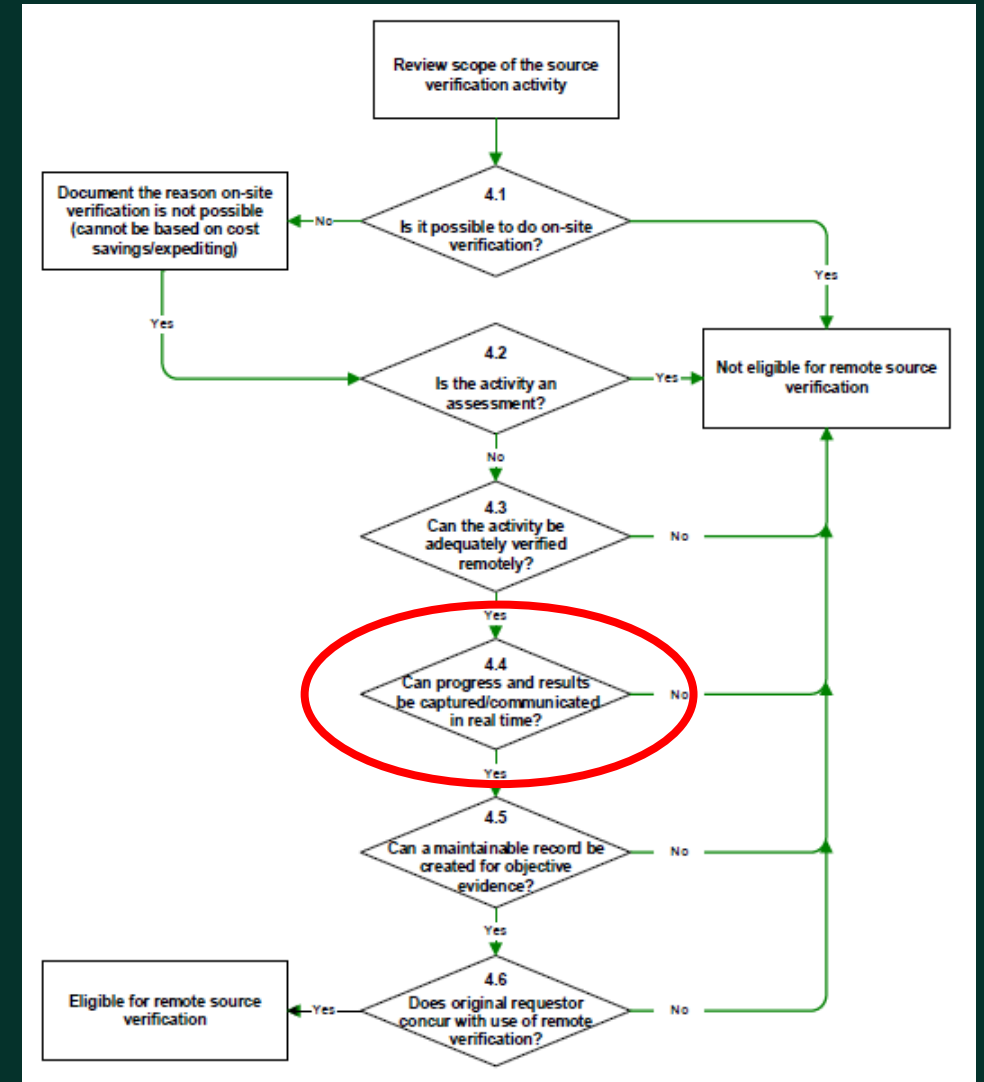
“Real Time” considerations

- Video not allowed due to site restrictions... can we still move forward? Why? How?
 - Experience with the supplier (also considered in Step 4.3)
 - Detailed familiarity with the layout, test equipment, and personnel performing tests
 - Auditor performing remote verification had performed 4 in-person source verifications at site during previous 14 months
 - Conference call held with supplier to determine feasibility and coordinate logistics
- RS concluded that, for this supplier and specific scenario, the activities and associated results would be able to be adequately captured in real time without the use of video

Flowchart – 4.4, continued

4.4 Can progress and results be captured and communicated in real time?

The intent of this question is to determine if technology can be used to capture the progress and results of the activity remotely, in real time (while the activity occurs), with two-way communication.



Flowchart – 4.5, 4.6

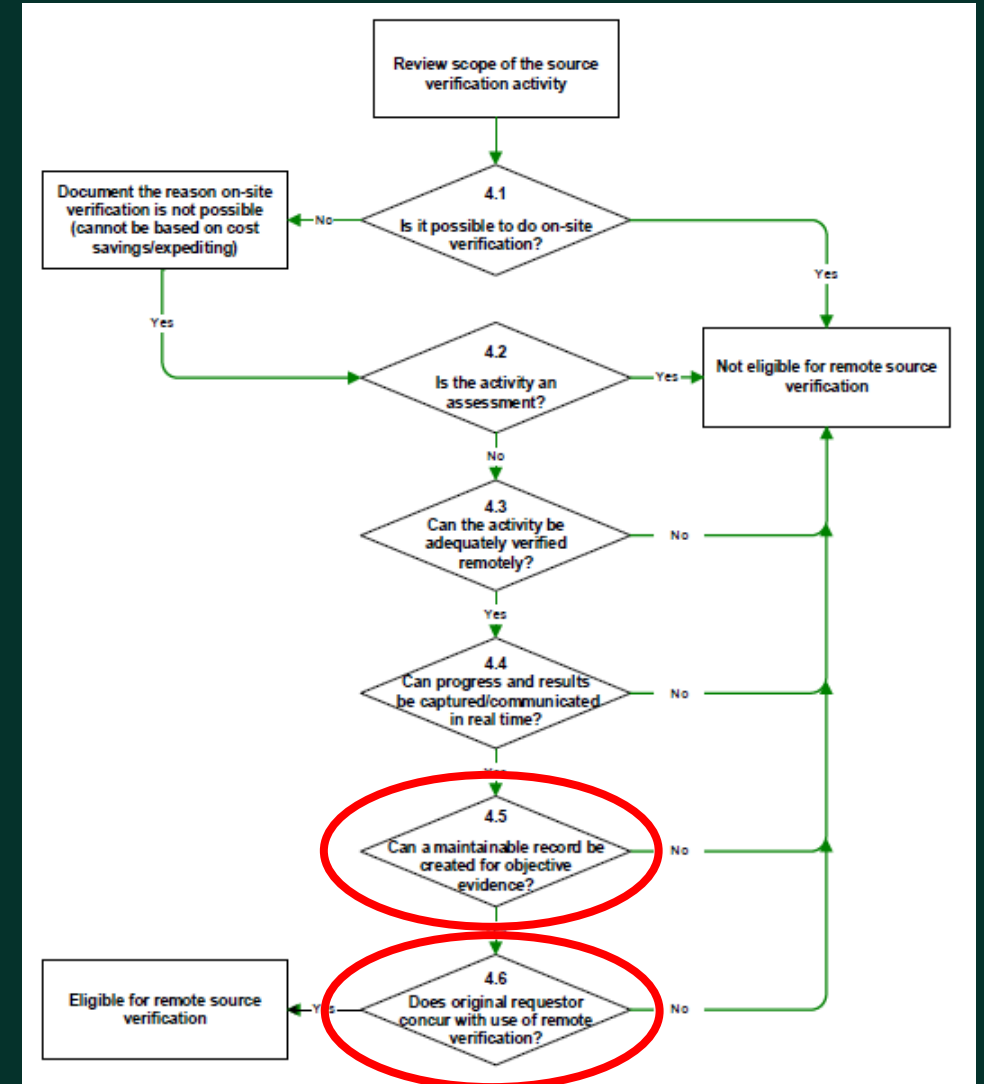
4.5 Can a maintainable record be created for objective evidence?

Yes.



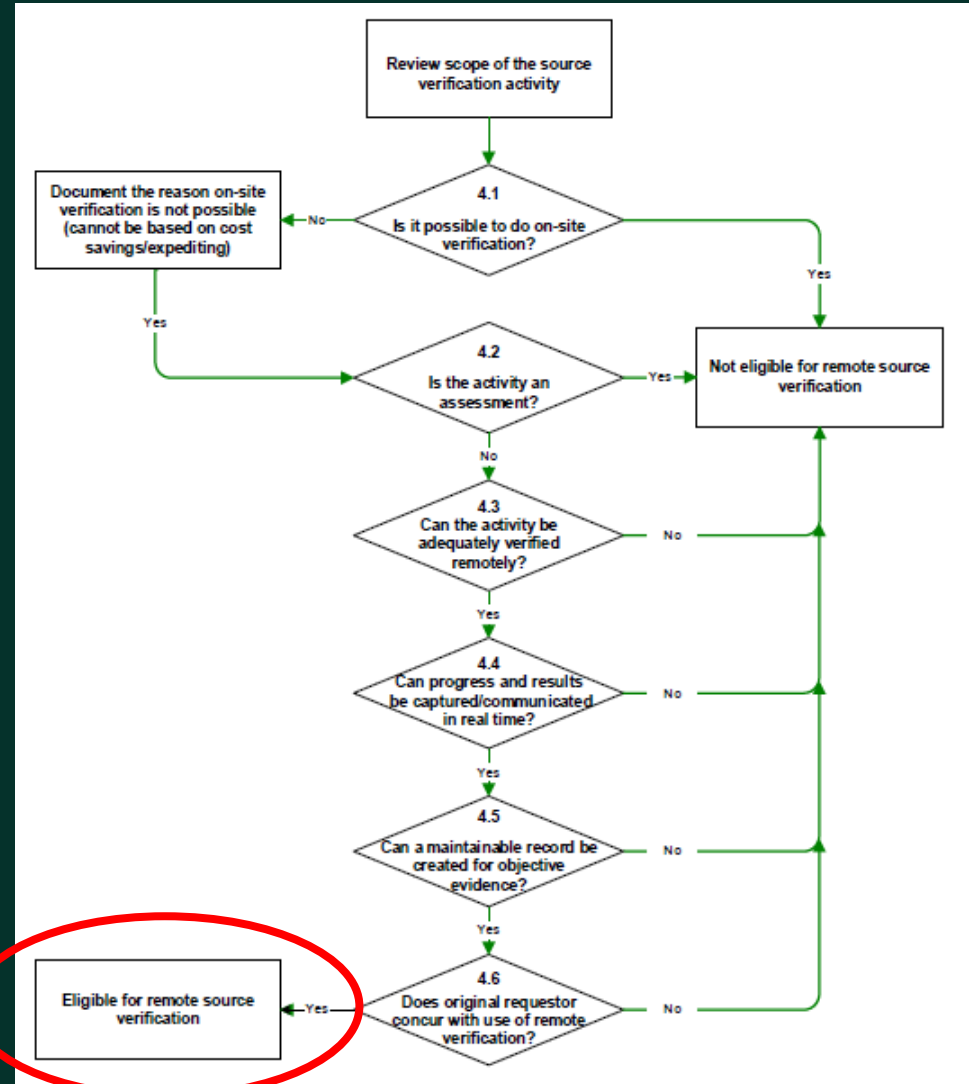
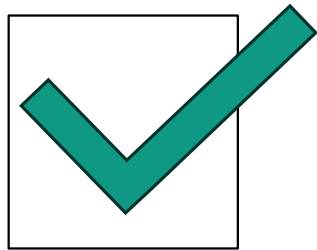
4.6 Does the original requestor concur with use of remote verification?

These are produced in batches. Planned to get customer concurrence as purchase orders received.



Flowchart - Conclusion

Yes. We believed Remote Source Verification would be applicable and effective for this application.



Additional Risk Mitigation

Issue

RS utilized an EPRI guideline document, but it had yet to be endorsed/approved by the NRC.

Concurrence could not be attained from all customers prior to performance of RSV.



Resolution

Write a corrective action in the RS system

Get customer approval prior to shipment

Summary

- Remote Source Verification can work, if applied properly
- Case-by-case review of every potential application of RSV needs to be understood (i.e. follow the flow chart in EPRI 3002019436)
- Every scenario cannot be “perfect” ... all relevant factors should be taken into consideration when deciding to use RSV

What would you have done?