



Tiger Team Pilot

Joshua Kaizer, PhD

Nuclear Performance and Code Review Branch
Division of Safety Systems
Nuclear Reactor Regulation

October 23, 2019

Background

- What is a Tiger Team?
- How does it work?
- When could it be used?
- When shouldn't it be used?
- Lessons Learned from Pilot.

What is a Tiger Team?

“a team of undomesticated and uninhibited technical specialists, selected for their experience, energy, and imagination, and assigned to track down relentlessly every possible source of failure in a spacecraft subsystem”

- 1964 - Society of Automotive Engineers, Third Annual Aerospace Reliability and Maintainability Conference

“A Tiger Team consists of a group of experienced reviewers who are focusing on a single application in order to greatly decrease the review time of that application.”

- for Topical Reports

How does it work?

- Regular Review – one primary reviewer and one peer reviewer for subject area in a Topical Report
 - Primary Reviewer – 200 hours (~ 85%)
 - Peer Reviewer – 35 hours (~ 15%)
- Tiger Team Review – two primary reviewers and an additional peer reviewer for a subject area in a Topical Report
 - Primary Reviewer 1 – 200 hours (~ 46%)
 - Primary Reviewer 2 – 200 hours (~ 46%)
 - Peer Reviewer – 35 hours (~ 8%)
- Increased man hours results in faster decision making.

When could you use a Tiger Team?

1. The Topical Report has a high priority.
 - The applicant is aware of the increased review cost.
 - The NRC is willing to commit the resources.
2. Two or more **experienced** technical reviewers available.
 - Necessary to reach technical decisions faster.
3. The applicant is able to support the accelerated review schedule.
 - The applicant can support the extended audits, calls, and RAI responses.



When shouldn't you use a Tiger Team?

1. A Topical Report in a brand new technical area.
 - For brand new technical areas, the NRC often needs to reach new conclusions.
2. An n -th of a kind Topical Report.
 - Regular review may already be expedited (i.e., no hard technical decisions, only documentation).
3. When a reduction in the review time is unlikely or if the possible reduction in the review time ($\approx 50\%$) is not worth the extra resources.



WCAP-18240 – Westinghouse Thermal Design Procedure

Review Highlights

1. Two primary reviewers (Joshua Kaizer, Reed Anzalone)
 - Each spent substantial hours reviewing material before first audit.
2. Expanded Audit for Understanding
 - 2 days audit, **2 days writing draft SE**
 - Applicant had draft RAIs at audit exit.
3. RAI Clarification Call
 - 4 hour call, **updated SE real-time**
4. Completed draft SE in 6 months, on track for under 1 year review time (50% reduction).

Conclusion

1. **Expanded scope audits and real-time SE updating are great time savers overall!!!**
2. A Tiger Team can result in significantly reduced review times.
3. The Tiger Team is one tool, and depending on the Topical Report, it may be the right tool.



- or -

