

CHAPTER 4

'DO' PHASE - INDEPENDENT TECHNICAL REVIEW (ITR)

4-1. General. Independent Technical Review (ITR) is a review by a qualified person or team not involved in the day-to-day production of a project/product, for the purpose of confirming the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. All products will be subjected to an ITR. ITR is a holistic, comprehensive review of the project. While ITR is a critical component of quality control, it will not replace checks or other quality control processes. Each ITR team member should review each product for consistency across the various disciplines of the project. ITR team members must also review his/her discipline's elements and how they impact and align with the project's functions. Comments will be limited to those that are required to ensure adequacy of the product; it will not be the reviewer's prerogative to dictate matters based solely on personal preferences.

4-2. ITR Objectives. The primary objectives of ITR are to ensure that:

- a. The project meets the customer's scope, intent and quality objectives as defined in the PMP.
- b. Formulation and evaluation of alternatives are consistent with applicable regulations and guidance.
- c. Concepts and project costs are valid.
- d. The recommended alternative is feasible and will be safe, functional, constructible, environmentally sustainable, within the Federal interest, and economically justified according to policy.
- e. All relevant engineering and scientific disciplines have been effectively integrated.
- f. Appropriate computer models and methods of analysis were used and basic assumptions are valid and used for the intended purpose.
- g. The source, amount, and level of detail of the data used in the analysis are appropriate for the complexity of the project.
- h. The project complies with accepted practice within USACE.
- i. Content is sufficiently complete for the current phase of the project and provides an adequate basis for future development effort.
- j. Project documentation is appropriate and adequate for the project phase.

4-3. ITR and Project Risk. ITR should be commensurate with the scope, complexity, risk and cost of the project. It is critical that appropriately experienced and technically expert personnel be assigned to both the PDT and ITR teams. The ITR team must be selected based upon factors such as the project scope, complexity and size; sponsor/customer expectations; public scrutiny; life safety; technical expertise required; overall knowledge of the Corps' business processes; and other appropriate guidelines.

4-4. ITR Team Membership. ITR team members will demonstrate senior-level competence in the type of work being reviewed. Junior-level staff cannot be members of ITR teams without appropriate senior-level technical monitoring. For most projects, ITR members should be sought from the following sources: regional technical specialists (RTS); appointed subject matter experts (SME) from other Districts; senior level experts from other Districts; Center of Expertise staff; appointed SME or senior level experts from the responsible District; experts from other USACE commands; contractors; academic or other technical experts; or a combination of the above. ITR should be performed outside of the responsible command for large and/or complex projects, high-risk projects, and when the responsible command does not have sufficient resources to conduct proper ITR. All ITR teams should strive to include personnel who are registered in their field of expertise, if applicable. While the selection of the ITR team and team leader is ultimately the responsibility of the command managing the project, it may be appropriate to obtain recommendations for ITR team members from outside the command such as from other Districts, other Regional Business Centers (RBC), HQUSACE, Centers of Expertise, or expert groups outside USACE.

4-5. ITR Team and PDT Relationship. Appropriate and separate PDT and ITR teams will be established during the initial PMP development. ITR reviews shall be conducted as necessary to ensure that the product is consistent with the PMP and established criteria, guidance, procedures and policy. ITR team members will be identified in the PMP and appropriate QCP, and any personnel changes are to be coordinated with the PM and reflected by updating the QMP. The ITR team must assure independence from the PDT by not becoming involved in the routine day-to-day production decisions, including formulation, evaluation, analyses, design, or value engineering studies. However, the ITR team will be available to act as advisors to the PDT during production. ITR should focus on offering the advantages, disadvantages and concerns of options considered by the PDT, and offer any other alternatives and/or better practices not considered by the PDT. The PM must ensure that the ITR team maintains situational awareness with respect to project challenges and opportunities. This could include, at a minimum, scheduled periodic project briefings and site visits. The PDT is responsible for production decisions.

4-6. Seamless Review. The ITR process shall be a continual process with formal reviews coordinated with the PDT at critical points, saving time and money, and minimizing unproductive design effort and rework. ITR team members will be available, knowledgeable, and willing to offer guidance as major issues arise. PDT members will be encouraged to seek concurrence from the ITR throughout the product delivery process through formal venues as prescribed in the PMP. The PM is responsible to ensure appropriate dialogue occurs between the ITR team and the PDT. The ITR team will furnish the PDT feedback at critical points during project formulation and design, and will conduct formal reviews at scheduled

milestones and as products are completed. Formal ITR of products only occurs when a holistic, comprehensive review of the overall product is performed.

4-7. Formal Reviews. The ITR team will document its comments and recommendations, for all formal reviews, utilizing the DrCheckssm module in ProjNetsm in accordance with ER 1110-1-8159. Comments will be structured to give a clear statement of the concern, the basis of the concern and, when appropriate, the actions necessary to resolve the concern. Comments will cite appropriate references. The PDT will evaluate and respond to each comment in DrCheckssm. Responses will clearly state concurrence or non-concurrence with the comment. Concurrences shall include what the corrective action is and where and when it will be done. Non-concurrences shall include an explanation or proposed alternative action. All comments are to be resolved and back checked in the DrCheckssm project record prior to ITR certification. The ITR team should also use the Design Quality Lessons Learned (DQLLsm) module in ProjNetsm to document project lessons learned.

4-8. Informal Reviews. The ITR team and PDT will periodically communicate throughout the project development process. The ITR team will render comments and recommendations to the PDT from time-to-time to avoid lost effort due to technical error.

4-9. Editorial Comments. Some comments and suggestions are about minor issues, while valid, may best be made informally, in parallel with but external to the official ITR process, in order to ensure the ITR focuses on significant deficiencies. However, a large number of editorial errors indicate that the QCP/QAP have not been followed and should be noted by a single comment in the review. Examples of comments best handled informally include:

- a. Spelling, grammar, format or language in the report.
- b. Minor numerical errors, which do not affect validity of the results.
- c. Other issues that will not contribute towards a safer, more functional, or more economical project.
- d. Repetitive comments on same subject where one comment is adequate.

4-10. Statement of Technical Review and ITR Certification Process. The ITR leader must complete a statement of technical review for all final products and final documents. In the case of civil works decision documents forwarded to HQUSACE for review, a statement of technical review will accompany both draft and final documents. A certification by ITR team leader, project manager, and the chief of the function that the issues raised by the ITR team have been resolved is required as part of the statement of technical review. Sample statements of technical review and certification of ITR are included at Appendix E. When an A-E performs the ITR, the appropriate principal of the contractor shall sign the statement. Sample statements of technical review and certification of ITR for an A-E contractor are included as Appendix E. Commands may modify the statements to fit local needs.

4-11. Engineering Technical Appendix (ETA) for Civil Works Planning Reports. An ETA will be reviewed for technical adequacy prior to being incorporated into the planning report. The complete planning report, including the ETA, in turn, will be subjected to an ITR per planning policy and guidance. Planning policy requires that the overall ITR be performed outside of the responsible command for all feasibility and post authorization studies.

4-12. District and Center Responsibilities. The command that has project management responsibility for a project is responsible for ensuring that ITR is performed and certified within established guidelines. As such, the command must assure that all requirements and processes are understood and followed. Each command will have procedures in its QMS defining:

- a. ITR Requirements. Determine the ITR requirements for the product in accordance with this ER.
- b. ITR Team Selection. Selection of the ITR team leader and ITR members in accordance with Team Establishment – PROC2020.
- c. Resources. Resources (time and funding) available for the ITR members in accordance with [Resource Estimate Development - PROC2040](#).
- d. Change Management Process. How resources or ITR members are changed in accordance with [Change Management - PROC3010](#).
- e. Process for ITR Comment Resolution. The PM and Technical Team Leader are responsible to facilitate contact between the ITR team and the PDT throughout the project development process. When the PDT does not concur with an ITR comment, the best means of resolution will normally be a discussion between PDT and ITR team members. When such a discussion does not result in an appropriate resolution, the issue must be elevated through the chain of command. The ITR team does not have authority to cause resolution of comments; the authority for comment resolution lies with the chain of command. The chief of the engineering function in the PDT command is the final authority for resolution of ITR comments. The Regional Headquarters may be asked to act as an informal sounding board for an unresolved issue, or may be asked by the District to resolve the issue. All comments in the DrCheckssm module will be back checked against the final documents prior to closing and issuing the ITR certification.
- f. Architect Engineer (A-E) Contractors. A-E contractors will typically be required to accomplish ITR of their products as part of their quality control process, also using the DrCheckssm module of ProjNetsm, and the responsible USACE command will perform quality assurance. USACE may, on an exception basis, perform an ITR to integrate the products of multiple A-E contractors or a single, comprehensive ITR of the product is otherwise required. An example may be if an A-E contractor performs the geotechnical and structural design while the civil and electrical design is either performed in-house by the USACE command or by another A-E contractor. These exceptions must be documented in the PMP

and the A-E contract(s). The A-E contractor is still responsible for quality control of its work. The USACE command is responsible for policy compliance on all projects.

4-13. Regional Business Center Responsibilities. With its quality assurance mission and Quality Management System, the RBC is responsible for the effectiveness of ITRs across the region.

- a. The RBC quality assurance (QA) manager provides oversight of the QMS and the ITR processes in the RBC and is the point of contact for the subordinate districts and HQUSACE for ITR issues. The RBC QA manager will serve as the regional champion for quality.
- b. ITR selection, issue resolution, certification processes, and quality assurance of A-E contractors, including use of the DrCheckssm module, will be reviewed during quality audits of Districts.
- c. RBC staff will be responsible for review, acceptance and dissemination of identified lessons learned and best practices. The RBC will use RTSs and SMEs to assist in this effort. Project-specific issues will be conveyed to the appropriate District Support Team, the RBC and the appropriate CoPs.