RT-420 Implementation of CII Best Practices for Small or Low Complexity Capital Projects

CONSTRUCTION INDUSTRY INSTITUTE


Constructability
Implementation of CII Research
Lessons Learned
Quality Management
Partnering
Planning for Modularization
Alignment
Advanced Work Packaging
Safety Excellence Techniques
Front End Planning
Team Building
Disputes Prevention & Resolution
Planning for Startup
Project Risk Assessment
Benchmarking & Metrics
Materials Management
Change Management

Research Objective

- **Objective**: Provide guidance to capital project organizations on implementing CII Best Practices for Small or Low Complexity Projects, subject to maintaining the fundamental best practices and underpinning principles but adjusting the scope of approach and scaling down their implementation methods.

- The definition of a "**small project**" can indeed vary significantly depending on various factors such as the industry sector, the size of the firm, and the specific context of the project. Each firm will use its own criteria to determine whether a project is considered small. If a firm does not have any guidance, RT-420 recommends the firm utilize the RT-305 complexity tools and/or attributes.

Achieving the Research Objective

- To achieve this objective, we have created a toolkit to help downscale CII Best Practices for application in small or low-complexity projects. It includes targeted recommendations from the RT-420 research team that indicate which components of each best practice are most applicable, or may be customized, for smaller project environments. Importantly, the toolkit is highly customizable, allowing organizations to tailor its use based on their internal processes or adapt it on a project-by-project basis to meet specific needs. This flexibility ensures that companies can implement best practices in a way that is both efficient and effective, without compromising on essential project outcomes.

CII RT-420 Implementation Self-Assessment Tool

- The new Implementation Self-Assessment Tool is a document that provides a replicable methodology for adapting any of the 17 Best Practices to the specific needs of Small or Low Complexity Capital Projects. It features two distinct modes: “Large Project Mode” and “Small Project Mode”, both represented by a purple and orange button, respectively. The Large Project Mode consists of the current Implementation self-assessment tool previously developed by RT-166, making it suitable for large or higher complexity projects. In contrast, the Small Project Mode introduces new content and customizations created by RT-420 to better address the unique requirements of smaller-scale projects. These customizations are further illustrated in the following pages.

We invite you to take a few moments to watch a tutorial of the Toolkit

Click Here to go to the Toolkit tutorial

https://bit.ly/3TdgJkt

We invite you to take a few moments to complete the survey below and share your feedback on the Toolkit

Click here to go to the Survey

https://bit.ly/CII_RT-420

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Alignment

Knowledge Area: Project Planning

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	Project Team is established and all team members clearly understand project objectives and have committed to work toward these goals.	IR213-2				Required
2.0	The project operations and maintenance philosophy was clearly communicated.					Required
3.0	Team members know and address key issues regarding data elements and business objectives used to develop project scope during FEP. • Clear priority between costs, schedule, and required project features. Project sponsors explicitly spell out priorities between cost, schedule, and required features.	IR113-2				Required
4.0	Team members know and employ three key issues of culture: • Project leadership is defined, effective, and accountable. • Communication within the team is open and effective. • Team culture fosters trust, honesty, and shared values.					Required
5.0	Team members know and employ three key issues for alignment of execution processes:	IR113-3				Required with Customization
	• Stakeholders are appropriately represented on project team.					
	• Front end planning (FEP) process includes sufficiently funded schedules and scope to meet objectives.					
	~~• FEP tools (checklists, simulations, and workflow diagrams).~~					Exclude Bullet 3
6.0	Team members understand three key issues related to planning (e.g., tools, software programs, checklists, and aides-memoirs) to assist in alignment during FEP:					Required with Customization
	• Team meetings are timely, productive, and designed to inform and obtain input.					
	• Teamwork and team building programs are effective.					
	~~• FEP tools (checklists, simulations, and workflow diagrams).~~					Exclude Bullet 3
7.0	~~Team alignment was promoted through a rewards/recognition program during front end planning.~~		X			Not Required
8.0	~~The rewards/recognition system was tied into the overall project objectives and priorities.~~		X			Not Required
9.0	~~All members of the FEP team and relevant internal groups and contractors were includedin the reward/recognition system.~~		X			Not Required
10.0	~~All members of the FEP team and relevant internal groups and contractors were includedin the reward/recognition system.~~		X			Not Required
11.0	The planning tools used for promoting alignment (e.g., checklists, simulations, software programs, and work flow diagrams for planning, developing, controlling and managing projects) were effective.					Required
	Preliminary Assessment Score		0			
	Maximum Attainable Score (11 x 3 = 33)		21			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		0.00			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Advanced Work Packaging

Knowledge Area: Construction Execution

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	**Prerequisites to Advanced Work Packaging**					
1.1	~~Project team understands and accepts the requirement for strategic early planning, a more focused project structure, and an effective flow of information.~~	IR272-2	X			Not Required
1.2	~~Project team converts information into a disciplined set of procedures (IWPs, EWPs, and CWPs).~~		X			Not Required
1.3	~~Effective project controls, document control, and procurement systems must be in place for the proper management of engineering or construction work packages.~~		X			Not Required
2.0	**Stage I - Preliminary Planning/Design Steps:** Project team reviews and addresses the scope, assumptions, recommendations, and information					
2.1	~~Project Definition~~	IR272-2	X			Not Required
2.2	~~Construction Planning~~		X			Not Required
2.3	~~Engineering Planning~~		X			Not Required
2.4	~~Schedule Refinement & WBS Development~~		X			Not Required
2.5	~~CWP Boundary Development~~		X			Not Required
2.6	~~EWP Boundary Development~~		X			Not Required
3.0	**Stage II - Detailed Engineering Steps:** Project team reviews and addresses the scope, assumptions, recommendations, and information					
3.1	~~Schedule Development~~	IR272-2	X			Not Required
3.2	~~Engineering~~		X			Not Required
3.3	~~Detailed Construction Schedule~~		X			Not Required
4.0	**Stage III - Construction:** Project team reviews and addresses the scope, assumptions, recommendations, and information requirements for					
4.1	~~IWP Creation~~	IR272-2	X			Not Required
4.2	~~Document Control Interface~~		X			Not Required
4.3	~~Insurance to Field~~		X			Not Required
4.4	~~Field Control of IWP~~		X			Not Required
4.5	~~IWP Closeout~~		X			Not Required
	Preliminary Assessment Score		**0**			
	Maximum Attainable Score (17 x 3 = 51)		**0**			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		**#DIV/0!**			

IMPLEMENTATION SELF-ASSESSMENT

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Best Practice: Benchmarking and Metrics

Knowledge Area: Performance Assessment

◉ Small Project ○ Large Project

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	Senior management of the company has committed to benchmarking as a basis of improvement.	IR BMM-2				Required
2.0	~~Benchmarking Associate selected and responsible for coordinating benchmarking for the organization.~~		X			Not Required
3.0	~~Attendance at Benchmarking Associates' training, focusing on metrics and terminology, online data entry, and organization- and industry-level reports.~~		X			Not Required
4.0	Project managers identified for benchmarking and improvement.					Required
5.0	Level of use determined on basis of performance measurements to be utilized.					Required
6.0	~~Benchmarking Associate utilizes Integration Toolkit to train project managers.~~		X			Not Required
7.0	Specific Projects selected for benchmarking that provide a realistic benchmark of the organization.					Required
8.0	Project benchmarking data input during project execution phases.					Required
9.0	~~Interim online CII recommendations acted upon to close gap between level of performance and best-in-class performance.~~		X			Not Required
10.0	~~Project closeout questionnaires finalized and submitted for validation and review by CII.~~		X			Not Required
11.0	~~Assistance provided to CII Account Manager for validation of projects for placement into the Data Warehouse.~~		X			Not Required
12.0	~~Self-analysis performed to compare performance and CII Best Practice use compared to those of others in the same industry group and cost category.~~		X			Not Required
13.0	Improvement plan developed and implemented using CII publications as basis of improvement.					Required
14.0	~~Steps 5-13 repeated for continuous improvement to obtain best-in-class performance.~~		X			Not Required
	Preliminary Assessment Score		0			
	Maximum Attainable Score (14 x 3 = 42)		18			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		0.00			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Change Management

Knowledge Area: Project & Program Management

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	The change management process is specified in project contracts.	SP43-1				Required
2.0	Principal project participants are familiar with documented change management process and have used it to actively manage project changes.					Required
3.0	Baseline project scope established early in project and frozen, with changes managed against this base.					Required
4.0	Areas susceptible to change are identified, and evaluated for risk during project design.					Required
5.0	Project changes are evaluated against business drivers and success criteria for project.					Required
6.0	All changes require formal justification.					Required
7.0	All parties agreed to a process for approving change before implementing it.					Required
8.0	System is in place to ensure timely communication of change information to proper disciplines and project participants.					Required
9.0	Project personnel take proactive measures to promptly settle, authorize, and execute change orders on project.					Required
10.0	Project contract addresses criteria for classifying change and the basis for adjusting contract.					Required
11.0	Tolerance level for changes is established and communicated to all project participants.					Required
12.0	All changes processed through identified owner representative.					Required
	Methods established to track and record lesson learned if a lessons learned program is available		**0**			
	Maximum Attainable Score (12 x 3 = 36)		**36**			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		**0.00**			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Constructability

Knowledge Area: Design Planning & Optimization

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	Constructability defined and owner/management committed to it early in project development.	SP34-1				Required
2.0	Constructability benefits assessed and recognized, and implementation procedure developed.					Required
3.0	Scope of constructability program established and constructability concepts selected, understood, and agreed upon by all parties. Program geared to construction contract type, project size, and project complexity.					Required
4.0	Environment conducive to constructability participation on project; well funded, with dedicated staff with the right expertise.					Required
5.0	Constructability implementation an integral part of project execution.					Required
6.0	~~A constructability coordinator assigned to each project, with well defined responsibilities, adequate time to exercise them, and an opportunity to play a major role on projects.~~		X			Not Required
7.0	The constructability team incorporates relevant information from the lessons learned database into the project execution plan.					Required
8.0	~~Matrices with detailed documentation utilized for evaluation.~~		X			Not Required
9.0	~~Self-assessment and barrier identification performed.~~		X			Not Required
10.0	~~Constructability barrier assessment checklist used as a tool in self-assessment/barrier~~		X			Not Required
11.0	The engineering deliverables reflect the recommendations for constructability from the construction personnel.					Required
12.0	~~Methods established to track and record lessons learned.~~					Required with Customization
	Methods established to track and record lesson learned if a lessons learned program is available					See Component
	Preliminary Assessment Score		**0**			
	Maximum Attainable Score (12 x 3 = 36)		**24**			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		**0.00**			

IMPLEMENTATION SELF-ASSESSMENT

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Best Practice: Disputes Prevention & Resolution

Knowledge Area: Risk Management

◉ Small Project ○ Large Project

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	~~Disputes Review Board (DRB) consistently stipulated in contract and subcontract documents.~~	IR23-2	X			Not Required, Consider at a Portfolio Level
2.0	~~Partnering principles consistently used on project.~~		X			Not Required, Consider at a Portfolio Level
3.0	~~DRB team consistently included in partnering.~~		X			Not Required, Consider at a Portfolio Level
4.0	~~DRB team established in early stages of all projects.~~		X			Not Required, Consider at a Portfolio Level
5.0	~~Neutral team members on DRB.~~		X			Not Required, Consider at a Portfolio Level
6.0	~~DRB team members experienced on this type of project.~~		X			Not Required, Consider at a Portfolio Level
7.0	~~DRB team +B12:B18operating procedures established.~~		X			Not Required, Consider at a Portfolio Level
8.0	~~Limits to authority of DRB team established.~~		X			Not Required, Consider at a Portfolio Level
9.0	~~DRB team compensation established.~~		X			Not Required, Consider at a Portfolio Level
	Preliminary Assessment Score		0			
	Maximum Attainable Score (9 x 3 = 27)		0			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		#DIV/0!			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Front End Planning

Knowledge Area: Project Planning

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	~~My company has a formal gated approval process for capital projects.~> My compnay has a formal gate approval process for small projects.	IR213-2				Required with Customization See Component
2.0	Front End Planning in my organization is adequately funded.					Required
3.0	The roles and responsibility of the Front End Planning team were well defined.					Required
4.0	~~The Front End Planning documentation was complete and of a high quality.~> Front End Planning documentation is sufficent to go through the gate process.					Required with Customization See Component
5.0	~~Existing and emerging process and/or building technologies were analyzed thoroughly and in detail~~		X			Not Required
6.0	Appropriate risk mitigation strategies were identified and clarified during Front End Planning.					Required
7.0	All necessary regulatory permits were addressed in Front End Planning.					Required
8.0	~~The project team uses Front End Planning tools, such as the PDRI, so that the FEP process provides sufficient scope definition and defines existing conditions thoroughly. This allows decision makers to evaluate the viability of a project prior to moving forward with design and construction.~> The project team uses a modified Front End Planning readiness tool, that helps ensure scope definition and defines existing conditions as required for small projects.					Required with Customization See Component
9.0	Project team members adequately represent the project stakeholders, including involvement, from both owners and contractors.					Required
10.0	The FEP process aligns key stakeholders with the project team.					Required
11.0	Project team members have the expertise and ability to contribute to the team and the project.					Required
12.0	~~The FEP process identifies the risks of new project types, technologies, and locations.~~		X			Not Required
13.0	The owner's objectives, needs, and expectations were clearly communicated to the Front End Planning team.	IR113-3				Required
14.0	~~The Front End Planning team members communicated effectively.~~	IR105-2	X			Not Required
	Preliminary Assessment Score		0			
	Maximum Attainable Score (14 x 3 = 42)		33			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		0.00			

IMPLEMENTATION SELF-ASSESSMENT

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Best Practice: Implementation of CII Research

Knowledge Area: Business and Project Processes

◉ Small Project ○ Large Project

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	~~Implementation efforts based on CII research findings, CII support, and CII Benchmarking data.~~	IR246-2, IR246-3, IS31-2, IR166-2	X			Not Required, Consider at a Portfolio Level
2.0	~~Organizational commitment from senior management secured, and statement to organization issued detailing commitment.~~		X			Not Required, Consider at a Portfolio Level
3.0	~~Internal funding for implementation of CII research findings is at appropriate levels in my organization.~~		X			Not Required, Consider at a Portfolio Level
4.0	~~Implementation champion(s) and publication review boards have been strategically selected and empowered in sufficient numbers on the basis of subject matter experts and/or geographically significant corporate offices.~~		X			Not Required, Consider at a Portfolio Level
5.0	~~There is a formal system or process in place for assessing CII research for potential incorporation into internal processes. For example, the CII Implementation Thermometer has been reviewed, discussed, and completely scored, and/or the IR 166-3 questionnaires for self-audit have been employed.~~		X			Not Required, Consider at a Portfolio Level
6.0	~~The most applicable CII research findings have been selected on the basis of the highest return value for the organization's range of services.~~		X			Not Required, Consider at a Portfolio Level
7.0	~~Plans and goals for implementation of CII research findings have been developed to address internal culture, business model, processes, and organizational structure (e.g., CII IR 246-2, Implementation Planning Model, is being used for effective implementation).~~		X			Not Required, Consider at a Portfolio Level
8.0	~~Educational resources have been allocated to support implementation efforts.~~		X			Not Required, Consider at a Portfolio Level
9.0	~~A formal process is in place to measure the results of the CII research findings that are being implemented (e.g., participation in a CII Benchmarking & Metrics process or measurement against established goals).~~		X			Not Required, Consider at a Portfolio Level
10.0	~~Implementation efforts and successes are recognized and rewarded.~~		X			Not Required, Consider at a Portfolio Level
	Preliminary Assessment Score		0			
	Maximum Attainable Score (10 x 3 = 30)		0			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		#DIV/0!			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Lessons Learned

Knowledge Area: Business and Project Processes

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Project
1.0	**Leadership**					
1.1	~~Upper management promotes and supports the lessons learned program (LLP) by providing encouragement and rewards.~~ Management promotes and supports the Lessons Learned Program (LLP).	IR230-2				**Required with Customization** **See Component**
1.2	Project teams consistently participate in an LLP.					**Required**
1.3	~~Managers communicate LLP to staff and employees.~~		X			**Not Required**
1.4	Individuals understand their role in the LLP.					**Required**
1.5	Upper management has a shared vision of the LLP that involves the entire organization.					**Required**
2.0	**LL Process: Submission/Collection**					
2.1	~~A designated group or individual in the organization administers LL submission/collection.~~ An individual in the project is designated to capture and convey the LL information collected.	IR230-2				**Required with Customization** **See Component**
2.2	The organization has a well-defined work process for submitting or collecting LLs.					**Required**
2.3	The work process for submitting/collecting LLs is consistently followed within the organization.					**Required**
2.4	The LL submission/collection process is effective.					**Required**
3.0	**LL Process: Analysis**					
3.1	Submitted LLs undergo an initial screening before they are analyzed and entered into the system.	IR230-2				**Required**
3.2	Submitted LLs are analyzed before they are shared within the organization.					**Required**
3.3	Qualified personnel analyze LLs.					**Required**
3.4	There is a defined work process for analyzing LLs in the organization.					**Required**
3.5	Members of the organization are aware of the analysis procedure for LLs.					**Required**
3.6	~~Individuals submitting LLs are given feedback.~~ Individuals submitting LLs are given feedback from the organization.					**Required with Customization** **See Component**
3.7	The LL analysis process is effective.					**Required**
4.0	**LL Process: Implementation**					
4.1	There is a defined work process for making LLs available within the organization.	IR230-2				**Required**
4.2	There is continuous (24/7) access to LLs in the organization.					**Required**
4.3	~~Some LLs in the system may be removed/retired after a certain amount of time.~~		X			**Not Required**
4.4	Individuals understand how to retrieve and apply LLs.					**Required**
4.5	There is a defined work process that requires the retrieval and application of LLs.					**Required**
4.6	The LL implementation process is effective.					**Required**
5.0	**Resources**					
5.1	The IT resources used in the organization enhance the ability of the LLP.	IR230-2				**Required**
5.2	The LLP IT system is integrated with other IT systems.					**Required, If System Previously Existed**
5.3	The LLP has adequate human resources to manage/ administer the process.					**Required, If System Previously Existed**
5.4	Individuals are trained to use the LLP effectively.					**Required, If System Previously Existed**
5.5	Individuals are given the time and resources needed to use and contribute to the LLP.					**Required, If System Previously Existed**
6.0	**Maintenance and Improvement**					
6.1	~~Maintenance of the LLP is constant and ongoing.~~ Maintenance of the LLP is constant and ongoing by the organization.	IR230-2				**Required with Customization** **See Component**
6.2	Feedback from individuals is solicited to improve the LLP.					**Required**
6.3	~~Metrics are used to evaluate the performance of the LLP.~~		X			**Not Required**
7.0	**Culture**					
7.1	Individuals participate in the LLP because they understand the value of the system.	IR230-2				**Required**
7.2	Communities of practice encourage their members to use the LLP to avoid/solve project problems or enhance performance.					**Required**
7.3	The lessons learned process is an ingrained part of day-to-day activities for all individuals.					**Required**
	Preliminary Assessment Score		**0**			
	Maximum Attainable Score (33 x 3 = 99)		**90**			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		**0.00**			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Materials Management

Knowledge Area: Materials Management

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Project
1.0	All project stakeholders (i.e., QC, engineering, owner, and construction) have identified their needs and are part of plan development.	IR257-2, IR257-3; FR-TC-03; RS344-1; FR-363; IR307-2, IR308-2; SR19-01				Required
2.0	~~The project has a computer-based materials management system that incorporates RFID technology.~~		X			Not Required
3.0	~~Materials management system is integrated with virtual plant model, scheduling, accounting systems.~~		X			Not Required
4.0	~~Materials management plan identifies and outlines responsibility for functions as follows: material takeoff, procurement, supplier evaluation, warehousing, field control, surplus, expediting, and QA/QC.~~		X			Not Required, Consider at a Portfolio Level
5.0	~~Project execution plan addresses materials management plan and ways to improve supply chain visibility RFID technology.~~					Required with Customization
	Project execution plan addresses materials management plan and ways to improve supply chain visibility.					See Component
6.0	~~Project team has written materials management plan including material inventory optimization.~~					Required with Customization
	Project team has written a materials management plan.					See Component
7.0	~~Materials management system has the following capabilities:~~ ~~• generates purchase orders from material requisitions~~ ~~• interacts with expediting status information~~ ~~• tracks supplier performance~~ ~~• links to schedule to show availability of materials~~ ~~• reports back order material status~~ ~~• reports field-issued material by craft~~ ~~• provides a surplus report~~ ~~• actively tracks bulk material, engineered material, and tagged items~~ ~~• uses bar coding for tool control, materials control, and estimating~~					Required with Customization
						Utilize Corporate or Site Level Systems
8.0	~~Project Material Data Requirements and Digital threads have been effectively programmed to facilitate and standardize information sharing.~~					Required with Customization
						Utilize Corporate or Site Level Systems
		Preliminary Assessment Score	0			
		Maximum Attainable Score (8 x 3 = 24)	15			
		Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100	0.00			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Partnering

Knowledge Area: Project Organization & Communication

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	**Owner's Internal Alignment**					
1.1	~~We use partnering on most projects as a matter of routine.~~	IR102-2	X			Not Required, Consider at a Portfolio Level
1.2	~~Our organization uses partnering champions.~~		X			Not Required, Consider at a Portfolio Level
1.3	~~Our organization conducts initial partnering workshops.~~		X			Not Required, Consider at a Portfolio Level
1.4	~~Identified key business drivers and developed strategic plan.~~		X			Not Required, Consider at a Portfolio Level
1.5	~~Evaluated partnering process both within and external to organization.~~		X			Not Required, Consider at a Portfolio Level
1.6	~~Conducted internal assessment and alignment.~~		X			Not Required, Consider at a Portfolio Level
1.7	~~Utilized alliance tools.~~		X			Not Required, Consider at a Portfolio Level
1.8	~~Utilized common tools.~~		X			Not Required, Consider at a Portfolio Level
2.0	**Partner Selection**					
2.1	~~Developed a selection team.~~	IR102-2	X			Not Required, Consider at a Portfolio Level
2.2	~~Defined roles and responsibilities.~~		X			Not Required, Consider at a Portfolio Level
2.3	~~Developed selection criteria.~~		X			Not Required, Consider at a Portfolio Level
2.4	~~Completed a checklist of key elements.~~		X			Not Required, Consider at a Portfolio Level
2.5	~~Completed applicable partner selection tools.~~		X			Not Required, Consider at a Portfolio Level
3.0	**Partnership Alignment**					
3.1	~~Taken steps to develop trusting relationship.~~	IR102-2	X			Not Required, Consider at a Portfolio Level
3.2	~~Developed aligned relationship objectives that support each party's strategic objectives.~~		X			Not Required, Consider at a Portfolio Level
3.3	~~Developed aligned measures based on objectives, and incentives based on measures.~~		X			Not Required, Consider at a Portfolio Level
3.4	~~Created a separate, empowered organization.~~		X			Not Required, Consider at a Portfolio Level
3.5	~~Developed a conflict resolution process.~~		X			Not Required, Consider at a Portfolio Level
3.6	~~Completed a checklist of key elements for this phase.~~		X			Not Required, Consider at a Portfolio Level
3.7	~~Completed applicable partnership alignment tools.~~		X			Not Required, Consider at a Portfolio Level
4.0	**Project Alignment**					
4.1	~~Developed project objectives, incentives, and measures.~~	IR102-2	X			Not Required, Consider at a Portfolio Level
4.2	~~Developed consistency among key individuals.~~		X			Not Required, Consider at a Portfolio Level
4.3	~~Empowered team.~~		X			Not Required, Consider at a Portfolio Level
4.4	~~Supplied team with appropriate tools and resources.~~		X			Not Required, Consider at a Portfolio Level
4.5	~~Developed and implemented efficient and effective communication methods.~~		X			Not Required, Consider at a Portfolio Level
4.6	~~Instituted a dispute resolution process, starting at the lowest level.~~		X			Not Required, Consider at a Portfolio Level
4.7	~~Planned social activities to nurture trust and promote teamwork.~~		X			Not Required, Consider at a Portfolio Level
4.8	~~Completed checklist of key elements for this phase.~~		X			Not Required, Consider at a Portfolio Level
4.9	~~Utilized applicable project alignment tools.~~		X			Not Required, Consider at a Portfolio Level
5.0	**Work Process Alignment**					
5.1	~~Communicated project objectives to entire project team.~~	IR102-2	X			Not Required, Consider at a Portfolio Level
5.2	~~Analyzed work processes.~~		X			Not Required, Consider at a Portfolio Level
5.3	~~Effectively allocated resources.~~		X			Not Required, Consider at a Portfolio Level
5.4	~~Developed and implemented a program for implementing innovative ideas and processes.~~		X			Not Required, Consider at a Portfolio Level
5.5	~~Extended empowerment down to the discipline level.~~		X			Not Required, Consider at a Portfolio Level
5.6	~~Defined roles and responsibilities.~~		X			Not Required, Consider at a Portfolio Level
5.7	~~Completed checklist of key elements.~~		X			Not Required, Consider at a Portfolio Level
5.8	~~Completed alliance work process alignment tool.~~		X			Not Required, Consider at a Portfolio Level
5.9	~~Completed applicable project-specific work process alignment tools.~~		X			Not Required, Consider at a Portfolio Level
6.0	~~Partnering team members feel free to offer suggestions openly.~~		X			Not Required, Consider at a Portfolio Level
6.0	**Partnering Measures**					
6.1	~~Determined which results measures will be used on the project, and completed them.~~	IR102-2	X			Not Required, Consider at a Portfolio Level
6.2	~~Determined which process measures will be used on the project, and completed them.~~		X			Not Required, Consider at a Portfolio Level
6.3	~~Determined which relationship measures will be used on the project, and completed them.~~		X			Not Required, Consider at a Portfolio Level
6.4	~~The partnering relationships facilitate/promote innovation~~		X			Not Required, Consider at a Portfolio Level
	Preliminary Assessment Score		**0**			
	Maximum Attainable Score (43 x 3 = 129)		**0**			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		**#DIV/0!**			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Planning for Modularization

Knowledge Area: Modularization

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	**Business Case Process**					
1.1	Project team applies modularization business case process at the earliest opportunity, starting as early as Opportunity Framing and proceeding in-depth during subsequent phases.	IR283-2				**Required**
1.2	All forms of benefits should be factored into the analysis.					**Required**
1.3	~~Project team should consider the modular approach the default approach, disproven only with thorough justification.~~		X			**Not Required**
1.4	~~Project team uses the Model Decision Flowchart, detailing major considerations and decision points of business case analysis.~~		X			**Not Required**
2.0	**Execution Plan Differences**					
2.1	Project team reviews and addresses the execution plan differences for the Selection phase.	IR283-2				**Required**
2.2	Project team reviews and addresses the execution plan differences for the Basic Design phase.					**Required**
2.3	Project team reviews and addresses the execution plan differences for the EPC phase.					**Required**
3.0	**Critical Success Factors**					
3.1	Project team ensures that modularization critical success factors (CSFs) are adequately reviewed prior to each project phase.	IR283-2				**Required**
3.2	Project team pay close attention to the high-impact CSFs .					**Required**
3.3	~~Project team pay close attention to the CSFs considered to be very common, common, and frequent in frequency.~~		X			**Not Required**
3.4	Substantial owner involvement occurs early for successful modularization.					**Required**
3.5	Project team should implement all the CSFs on or before the recommended optimal timing.					**Required**
4.0	**Standardization Strategy**					
4.1	~~Project organization considers two basic approaches: the standard modules and the modular standardized plant (MSP).~~	IR283-2	X			**Not Required**
4.2	Project organization considers leveraging the benefits from modularization with design standardization.					**Required**
	Preliminary Assessment Score		**0**			
	Maximum Attainable Score (14 x 3 = 42)		**30**			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		**0.00**			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Planning for Startup

Knowledge Area: Commissioning, Startup, and Handover

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	Conceptual Development and Feasibility elements addressed. • Realistic forecast of startup duration developed. • Startup costs estimated. • Impact of startup on project economics recognized.	IR121-2				Required
2.0	Front End Engineering plan incorporates startup criteria. • Startup objectives established. • Startup execution plan developed. • Startup team assignments made. • Startup systems identified. • Operations and maintenance (O&M) input obtained. • Startup risks assessed. • Startup incentives analyzed. • Startup procurement requirements identified. • Startup budget and schedules refined. • Startup execution plan updated.					Required
3.0	Detailed Design phase includes startup criteria. • Address startup issues in team-building sessions. • Assess and communicate startup effects from changes. • Plan for supplier field support of startup. • Include startup in the project CPM schedule. • Plan for startup QA/QC. • Refine the startup team organization plan and responsibility assignments. • Acquire additional O&M input. • Indicate startup system numbers on engineering deliverables. • Refine startup risk assessment. • Plan O&M training. • Develop startup spare parts plan. • Develop system turnover plan. • Develop and communicate startup procedures and process safety management. • Refine startup budget and schedule. • Update the startup execution plan.					Required
4.0	Procurement includes startup requirements in contracting and purchasing program. • Engage quality suppliers for startup services. • Refine the startup spare parts plan and expedite. • Implement the procurement QA/QC plan.					Required
5.0	Construction includes and interfaces with startup team. • Update the startup execution plan and release for construction. • Conduct construction/startup team building. • Refine the startup integrated CPM schedule. • Conduct operator/maintenance training. • Implement the field QA/QC plan. • Finalize the startup risk assessment. • Transition to startup systems-based execution.					Required
6.0	Checkout and commissioning plan developed and implemented. • Finalize the O&M organization and management systems. • Checkout systems. • Commission systems.					Required
7.0	Startup team participates in performance testing, initial operations, and project completion. • Introduce feedstocks. • Conduct performance testing. • Finalize documentation.					Required
	Preliminary Assessment Score		0			
	Maximum Attainable Score (7 x 3 = 21)		21			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		0.00			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Project Risk Assessment

Knowledge Area: Risk Management

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	~~The project team uses FEP tools, such as the PDRI and project risk assessment (PRA), to provide sufficient scope definition to thoroughly define existing and future conditions and risks so decision makers can evaluate a project's viability prior to design and construction.~~ The project team uses FEP tools, such as the PDRI and project risk assessment (PRA), to provide sufficient scope definition to thoroughly define existing and future conditions and risks so decision makers can evaluate a project's viability prior to design or a company-specific tool used for small projects.	IR213-2				**Required with Customization** **See Component**
2.0	Senior management of the organization sees the benefits of following the FEP and conducting a PRA.					**Required**
3.0	~~Project managers are adequately trained in the PRA process.~~ Project managers are adequately trained on the specific risk assessment tools the company is using.					**Required with Customization** **See Component**
4.0	~~Project risk assessment was frequently conducted.~~ Project risk assessment was conducted at each project gate at a minimum.					**Required with Customization** **See Component**
5.0	~~An outside facilitator was used to conduct risk assessment.~~		X			**Not Required**
6.0	~~Risk mitigation costs and contingency are added to the authorized budget as a result of the risk assessment process.~~ Contingencies are added to the authorized budget as a result of the risk assessment process.	IR18 1-2 IR28 0-2				**Required with Customization** **See Component**
7.0	~~The project mitigation plan's schedule impact(s) are properly reflected in the project schedule as a result of using the IPRA.~~ Scheduled risks are considered and incorporated regardless of the risk assessment tool utilized.					**Required with Customization** **See Component**
8.0	~~The risk assessment process is well documented on each project.~~ The risk assessment process is well documented in the company's project management system.					**Required with Customization** **See Component**
9.0	~~The risk mitigation plan is frequently updated on each project~~ The risk mitigation plan is at least updated at each project gate phase.					**Required with Customization** **See Component**
10.0	Project team members adequately represent the project stakeholders, including the involvement of both owners and contractors in the development and definition of a risk mitigation plan.					**Required**
11.0	~~The IPRA process aligns key stakeholders with the project's risks, and the defined risk mitigation plan is executed.~~ Regardless of what project risk assessment tool is being utilized, stakeholders are aligned with the project risks and the risk mitigation plan is being executed.					**Required with Customization** **See Component**
	Preliminary Assessment Score		0			
	Maximum Attainable Score (11 x 3 = 33)		30			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		0.00			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Quality Management

Knowledge Area: Quality Management

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	**Understanding QMS Requirements**					
1.1	~~Identified basis for your company's QM system (e.g. ISO 9001)~~	IR254-2	X			Not Required
1.2	~~QM system defined in a quality manual.~~	IR254-2, IR320-2	X			Not Required
1.3	Quality systems clearly identified and documented.	IR254-2				Required
1.4	~~Quality-related roles and responsibilities documented.~~	IR254-2	X			Not Required
1.5	~~Upper Management team understands the QMS basis and requirements.~~	IR254-2	X			Not Required
1.6	~~QMS integrated with business process improvement methods (e.g., Lean Six Sigman, TQM, Malcolm Baldridge).~~	IR254-2	X			Not Required
2.0	**Processes Governed by the QMS**					
2.1	~~The key processes governed by the QMS have been outlined in a diagram.~~	IR254-2	X			Not Required
2.2	Each key process is understood across the organization.	IR254-2				Required
2.3	The sequence and responsibility for the execution of the key processes are understood across the organization.	IR254-2				Required
3.0	**Management Commitment**					
3.1	~~The written quality policy and performance objectives are endorsed by executive management.~~	IR254-2	X			Not Required
3.2	~~The QMS policies and objectives are focused on understanding customer requirements and ensuring their fulfillment.~~	IR254-2	X			Not Required
3.3	~~There is a quality manager/director responsible for assisting top mangement in implementation of the QMS.~~	IR254-2	X			Not Required
4.0	**Assessing QMS Compliance**					
4.1	~~Implementation is periodically assessed for compliance with QMS basis (e.g., ISO 9001).~~	IR254-2, IR320-2	X			Not Required
4.2	~~An internal audit program is in place.~~	IR254-2	X			Not Required
4.3	~~QMS certified by an independent third-party organization.~~	IR254-2	X			Not Required
5.0	**Measuring Effectiveness (Metrics)**					
5.1	Performance metrics established that are aligned with the key business processes and performance objectives.	IR254-2, IR203-2, IR313-2				Required
5.2	Data are collected consistently and accurately to record measurement of these metrics.	IR254-2, IR203-2, IR313-2				Required
5.3	Metrics are assembled in reports for analysis against desired outcomes.	IR254-2, IR203-2, IR313-2				Required
5.4	~~Plan-Do-Check-Act assessment methodology being used as the framework for analyzing QMS processes.~~	IR254-2	X			Not Required
6.0	**QMS Maturity and Improvement**					
6.1	~~Maturity of the QMS is periodically assessed using CII Best Practice.~~	IR254-2	X			Not Required
6.2	~~CII Quality Management Best Practice is know and understood.~~	IR254-2	X			Not Required
6.3	~~QMS improvement goals and objectives established and agreed upon by executive management.~~	IR254-2	X			Not Required
	Preliminary Assessment Score		**0**			
	Maximum Attainable Score (22 x 3 = 66)		**18**			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		**0.00**			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Team Building

Knowledge Area: Project Organization & Communication

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document	Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations For Small Projects
1.0	**Team Building Principles**					
1.1	Project management determined that team building techniques should be used on projects.	SD-87				**Required**
1.2	~~Written, site-specific zero accident/ safety plan has been developed for each project or an on-site safety plan has been adopted for the project.~~		X			**Not Required**
1.3	Project management scheduled an initial communications assessment early in the project	IR105-2				**Required**
1.4	~~A zero accidents/safety professional has been identified on each project.~~		X			**Not Required**
1.5	~~Communications improvement strategy developed.~~		X			**Not Required**
2.0	**Overcoming Potential Obstacles to Team Building**					
2.1	Organization's top management demonstrated support for team building process.	SD-87				**Required**
2.2	~~Project management members familiarized with "team building process."~~		X			**Not Required**
2.3	~~Written plan for training became a part of the team building process.~~		X			**Not Required**
	Preliminary Assessment Score		**0**			
	A third party safety training is required for all employees, including subcontractor employees.		**9**			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100		**0.00**			

IMPLEMENTATION SELF-ASSESSMENT

Best Practice: Zero Accidents Techniques

Knowledge Area: Safety

◉ Small Project ○ Large Project

Element Score Definition:

Strongly Disagree	0
Somewhat Disagree	1
Agree	2
Strongly Agree	3
Unable to address	X

Item	Implementation Assessment Element	CII Document		Element Score	Organization Documents Reviewed & Comments	Customizations Implemented by the Project Team	CII Recommendations for Small Projects
1.0	A program is in place for the careful selection of safe contractors.	RS190-1					Required
2.0	~~Written, site-specific zero accidents/safety plan has been developed for each project.~~ Written, site-specific zero accident/ safety plan has been developed for each project or an on-site safety plan has been adopted for the project.	RS32-1 Appendix D					Required with Customization See Component
3.0	~~A zero accidents/safety professional has been assigned on each project site full-time.~~ A zero accidents/safety professional has been identified on each project.						Required with Customization See Component
4.0	Written zero accidents/safety incentive awards program for hourly craft employees, including subcontractor employees, is established on each project site.						Required
5.0	Each project requires zero accidents/safety orientation for all new employees, including subcontractor employees.						Required
6.0	Each project requires weekly zero accidents/safety toolbox meetings, including subcontractors.						Required
7.0	Each project requires pre-hire substance abuse testing of all employees, including subcontractor employees.						Required
8.0	~~Each project requires random substance abuse testing of all employees, including subcontractor employees.~~			X			Not Required
9.0	~~Each site requires on-site OSHA safety training.~~ A third party safety training is required for all employees, including subcontractor employees.		E, M				Required with Customization See Component
10.0	Corporate safety personnel conduct frequent safety audits.	RS160-1					Required
11.0	Near-misses are frequently investigated.						Required
12.0	Safety risks are systematically identified in the preconstruction phases of each project.						Required
Owner-specific Items (If Contractor, enter "X" as Scores below).							
13.0	~~There are established processes and funding for a safety recognition program.~~	RS190-1		X			Not Required
14.0	~~A full-time onsite safety representative has been assigned.~~			X			Not Required
	Preliminary Assessment Score			0			
	Maximum Attainable Score (14 x 3 = 42)			33			
	Normalized Score (Preliminary Assessment Score / Maximum Attainable Score) x 100			0.00			