**Requirements Management Plan**

**ACC BCC Expansion Project**

**American Chemet Corporation**

**145 Highway 282**

**East Helena, MT 59635**

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# Introduction

The Requirements Management Plan is a crucial component for the successful implementation of the ACC BCC Expansion Project. This plan will serve as a guide for establishing how requirements will be collected, analyzed, documented, and managed throughout the project's lifecycle. It will ensure that both project and product requirements are adequately addressed, reducing the likelihood of omissions, incomplete documentation, or unfulfilled requirements. By adhering to this Requirements Management Plan, the project team can effectively manage the requirements of the BCC Expansion Project, ultimately delivering a successful new production plant capable of producing high quality material at high rates.

# Requirements Management Approach

The requirements management approach for the ACC BCC Expansion Project will be structured into four key areas: requirements identification, requirements analysis, requirements documentation, and ongoing requirements management.

**Requirements Identification:** The project team will employ various methods to collect requirements, which may include interviews, focus groups, facilitated workshops, group creativity techniques, questionnaires and surveys, or product prototypes. These will be conducted among the project stakeholders, such as ...

**Requirements Analysis:** The project team will analyze requirements to determine whether they fall into project or product categories. This analysis will also determine where in the Work Breakdown Structure (WBS) the requirements will fall or which work activities correspond to specific requirements. Accountability and priority for each requirement will be determined as part of the analysis. Furthermore, metrics and acceptance criteria must be established for all requirements to provide a baseline for understanding when a requirement has been fulfilled to an acceptable level.

**Requirements Documentation:** Once requirements have been identified and analyzed, they will be documented and assigned to accountable personnel. These requirements will be added to the BCC Expansion Project Plan, and the project team will determine the methodology that accountable personnel will use to track and report on the status of each requirement. All requirements will also be added to the project requirements checklist, which must be completed before formal project closure is accepted by the project sponsor.

**Ongoing Requirements Management:** The project team will continuously monitor and manage the requirements throughout the project lifecycle. This process includes tracking the progress of each requirement, assessing the impact of any changes, and updating the requirements documentation as needed. Regular reviews of the requirements will be conducted to ensure alignment with the project's objectives and to identify any new or emerging requirements that may arise during the course of the project.

By following this comprehensive requirement management approach, the BCC Expansion Project will be better positioned to achieve its goals and deliver a successful production plant.

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# Configuration Management

To effectively manage the ACC BCC Expansion Project, communication and control over project changes and requirements must be maintained. Configuration management plays a vital role in ensuring that changes to the project or its requirements are carefully considered, reviewed, approved, implemented, and communicated to all stakeholders. As stated in the PMBOK, configuration management activities include the initiation of changes, impact analysis, traceability, tracking, reporting, and required authorization levels for approval.

Configuration Management Process:

1. **Change Initiation:** Proposed changes to the project or its requirements can be initiated by project team members, stakeholders, or other parties involved in the project. These changes must be documented and submitted as a formal change request, outlining the reasons for the change and the potential impacts on the project.
2. **Impact Analysis:** The project team will analyze the proposed change to assess its impact on the project's scope, schedule, budget, resources, and other relevant aspects. This analysis will help determine if the change is necessary and beneficial to the overall project objectives.
3. **Change Review and Approval**: A designated change control board or similar authority, consisting of key project stakeholders, will review the proposed change and its impact analysis. The board will then decide whether to approve, reject, or request further information before deciding.
4. **Change Implementation**: If the proposed change is approved, the project team will update the project plan, schedule, and other relevant documentation to reflect the change. This may include adjusting work packages, reallocating resources, or revising the project's scope or requirements.
5. **Change Communication**: The project manager will communicate the approved change to all relevant stakeholders, ensuring they are aware of the change, its impacts, and any necessary actions they must take. This communication will be consistent and clear to minimize misunderstandings and maintain transparency.
6. **Change Tracking and Reporting:** The project team will track and report on the status of the change, its implementation, and its impact on the project. This information will be included in the regular project status reports and will be used to inform decision-making and ongoing project management activities.

By implementing a robust configuration management process, the ACC BCC Expansion Project can effectively manage changes, maintain control over project requirements, and ensure the successful delivery of a functional production plant.

# Requirements Prioritization Process

Prioritizing requirements is essential for effective requirements management in the BCC Expansion Project. To ensure a successful project, it is crucial to understand the importance of each requirement and its impact on scope, time, and cost. Collaboration among all stakeholders is necessary for establishing priorities and making informed decisions when faced with project constraints. The following process will be used to prioritize requirements for this project:

1. **Categorize Requirements:** Group the requirements into high, medium, and low priority categories based on their importance to the project's objectives. High-priority requirements are essential for the project's success, while medium and low-priority requirements are less critical but still contribute to the overall goals.
2. **Evaluate Impact**: Analyze the scope, time, and cost impacts of each requirement on the project. This will help stakeholders understand the potential consequences of implementing or omitting specific requirements.
3. **Collaborative Decision-Making**: Facilitate discussions among stakeholders to determine the priority of each requirement. Encourage open communication and collaboration to ensure that everyone's concerns and perspectives are considered during the prioritization process.
4. **Rank Requirements**: Rank the requirements within each priority category, considering their importance and impact on the project. This will provide a clearer understanding of which requirements should be addressed first and which can be deferred if necessary.
5. **Review and Adjust**: Periodically review and adjust the prioritization throughout the project lifecycle, as new information becomes available or circumstances change. This will ensure that the project remains focused on addressing the most important requirements and adapts to any changes in the project's environment.

By following these requirements prioritization process, the BCC Expansion Project will be better equipped to manage its requirements effectively and efficiently, ultimately contributing to the overall success of the project.

# Product Metrics

Product metrics are essential for determining a project's success, as they provide quantitative measures to gauge progress and success. For the BCC Expansion Project, product metrics will be based on factors such as cost, quality, and performance requirements, as outlined in the project charter. To achieve project success, the BCC Expansion Project must meet or exceed all established metrics.

**Cost**:

* Ensure that expenses remain within the allocated budget of $10,000,000 for all project phases and activities, including procurement of hardware, software, third-party components, as well as personnel expenses and training costs.
* Allocate budgetary resources for the procurement, licensing, and integration of the third-party components or work. This includes upfront costs associated with purchasing the components, as well as any additional expenses related to customization, configuration, and technical support required for seamless integration.
* Ensure that the budget allocation accounts for potential fluctuations in pricing, licensing models, and ongoing subscription fees associated with the contracted services or components.
* Monitor expenditure closely through cost tracking mechanisms to identify and address any deviations from the budget, implementing corrective actions as necessary to prevent cost overruns and maintain financial control.
* Optimize resource allocation and utilization to minimize unnecessary spending while maximizing the value delivered by the project, reallocating resources as needed to prioritize critical activities and minimizing budgetary strain.
* Evaluate the return on investment (ROI) for each expenditure, ensuring that funds are allocated effectively to deliver tangible benefits and value to the organization, stakeholders, and end-users.

**Quality**:

* Ensure that the selected third-party components perform as expected, facilitating seamless integration and interoperability without requiring extensive modifications.
* Implement a comprehensive testing strategy that encompasses unit testing, integration testing, system testing, and user acceptance testing to identify and address defects at each stage of the development process, aiming to achieve a defect density of less than 1%.
* Ensure that the completed production plant undergoes rigorous testing to assess its reliability and robustness, minimizing downtime, errors, or system failures and ensuring continuous availability for users.
* Implement quality control measurements to evaluate the scalability of the production plant, ensuring it can accommodate future growth and expansion of ACC’s market share, without compromising performance.
* Monitor the production plant’s performance and stability through quality control activities, assessing the vendor's support and maintenance services to address any issues promptly and ensure ongoing operational excellence.
* Utilize automated testing tools and continuous integration practices to streamline the testing process and increase testing coverage while reducing manual effort and potential human error.
* Implement robust error tracking and logging mechanisms within the software application to facilitate efficient debugging and troubleshooting of issues reported by end-users or detected during testing, aiming to reduce resolution time and improve customer satisfaction.
* Establish key performance indicators (KPIs) for quality metrics such as production rate, customer reported issues, and software/hardware compatibility issues, tracking these metrics over time to monitor trends and identify areas for improvement while ensuring a high-quality product.

**Performance**:

* Ensure that the production plant meets performance criteria and seamlessly integrates with ACC’s existing framework without compromising system efficiency or scalability.
* Conduct thorough performance testing to assess the plant’s processing speed, accuracy, and scalability, ensuring that it meets or exceeds predefined performance benchmarks.
* Verify compatibility with existing hardware and software infrastructure to prevent compatibility issues and optimize overall system performance.
* Employ performance testing methodologies such as load testing, stress testing, and scalability testing to evaluate the plant’s ability to handle expected workloads and peak usage scenarios, ensuring that the system can produce at least 2,205 lbs. / hour.
* Monitor system performance in real-time using performance monitoring tools and dashboards, proactively identifying performance bottlenecks and resource constraints before they impact end-users, aiming to maintain uptime of at least 99%.
* Implement disaster recovery and failover mechanisms to maintain service availability in the event of hardware failures, network outages, or other unforeseen incidents, minimizing downtime and service disruptions, thereby ensuring business continuity and customer satisfaction.

By establishing and monitoring these product metrics, the BCC Expansion Project can effectively measure its progress and success, ensuring the successful introduction of the new production plant within the allocated budget and timeline, while maintaining high standards of quality and performance.

# Requirements Traceability Matrix

The requirements traceability matrix for the BCC Expansion Project is designed to ensure that all project requirements are completed according to the project charter. This matrix traces all product requirements through design, implementation, testing, and user acceptance. Any approved changes to the project scope or requirements will result in updates to the traceability matrix. The Project Manager will make the necessary changes to the matrix and communicate those changes to all project stakeholders.

| **Requirement ID** | **Requirement Description** | **Design Document Reference** | **Test Case Reference** | **User Acceptance Criteria** |
| --- | --- | --- | --- | --- |
| RID-1 | Integrate new plant with existing production framework | RID-1-DD | RID-1-TC | RID-1-UAC |
| RID-2 | Conduct research to identify customer needs. | RID-2-DD | RID-2-TC | RID-1-UAC |
| RID-3 | Evaluate and select the third-party components’ requirements. | RID-3-DD | RID-3-TC | RID-1-UAC |
| RID-4 | Implement QA processes for product reliability. | RID-4-DD | RID-4-TC | RID-1-UAC |
| RID-5 | Create comprehensive documentation for the plant. | RID-5-DD | RID-5-TC | RID-1-UAC |
| RID-6 | Provide training for end-users, stakeholders, and support teams. | RID-6-DD | RID-6-TC | RID-1-UAC |

By maintaining these requirements traceability matrix, the BCC Expansion Project can ensure that all product requirements are satisfied, and project deliverables are met, ultimately contributing to a successful program that increases production capacity of BCC in East Helena, MT.

**Sponsor Acceptance**

Approved by the Project Sponsor:

Date:

Bill H. S.

President and CEO