



Chennai Petroleum Corporation Limited
(A Govt. of India Enterprise and a Group Company of IndianOil)

PECS

BUILD PLAN – PI REPORT



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For

Retail Outlet Dealer Selection Portal

Chennai Petroleum Corporation Limited, Chennai

A Govt. of India Enterprise and a Group Company of IndianOil)

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Development Team

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1. Document Control

Version	Date	Prepared By	Reviewed By	Approved By
1.0	15/04/2025	Development Team	Mr. Janki Vallabh, Project Manager	Mr. Janki Vallabh, Project Manager

2. Purpose of the Document

The purpose of this document is to define the **Build Plan and Process Improvement (PI) activities** for the ASP.NET Core Application in accordance with **CMMI Process Areas**. This ensures standardization, quality assurance, risk mitigation, and continuous process enhancement.

3. Scope

This document covers:

- Build Management Process
- Environment Setup
- Code Compilation & Deployment
- Process Improvement Activities
- Risk Management
- Quality Assurance
- Configuration Management

Applicable to:

- Development
- Testing
- UAT
- Production Deployment



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4. Build Strategy

4.1 Build Type

- **Daily Build** – For development testing
- **Release Build** – For UAT and Production

4.2 Version Control

- Tool Used: **Git**
- Branch Strategy:
 - Main
 - Development
 - Release
 - Hotfix

5. Build Environment

Environment	Server	Framework	Database
Development	Windows Server	.NET Core 6	SQL Server
Testing	Windows Server	.NET Core	SQL Server
UAT	Windows Server	.NET Core	SQL Server
Production	Windows Server	.NET Core	SQL Server

6. Build Tools

- Visual Studio 2019
- .NET SDK
- MSBuild
- PowerShell
- IIS
- SQL Server Management Studio



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7. Build Process Flow

- Code Check-in by Developer
- Code Review
- Static Code Analysis
- Build Trigger
- Compilation
- Unit Test Execution
- Build Packaging
- Artifact Storage
- Deployment to Test/UAT
- Verification & Approval

8. Roles & Responsibilities

Role	Responsibility
Developer	Code development & unit testing
Build Manager	Build execution & release
QA Team	Verification & Validation
Project Manager	Approval & Monitoring
Configuration Manager	Version control & baselines

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9. Configuration Management

- Source Code Versioning
- Build Artifacts Control
- Change Request Management
- Release Baseline Creation
- Rollback Strategy

10. Risk Management

Risk	Impact	Mitigation
Build Failure	High	Maintain rollback build
Environment Issue	Build execution & release	Pre-deployment checklist
Dependency Conflict	High	Version lock

11. Quality Assurance

- Code Review Checklist
- Build Verification Testing (BVT)
- Security Scan
- Performance Testing
- Compliance Audits

12. Verification & Validation

- Unit Testing
- Integration Testing
- UAT Validation
- Production Smoke Testing

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13. Process Improvement

- Reduce build failure rate
- Improve deployment time
- Increase first-time-right builds
- Improve documentation accuracy
- Automate build and release pipelines

14. PI Activities Implemented

PI ID	Activity	Benefit
PI-01	Automated Build Pipeline	Reduced manual errors
PI-02	Standard Deployment Scripts	Faster deployments
PI-03	Pre-Build Code Review	Reduced defects
PI-04	Checklist-Based Build Approval	Improved quality

15. Release & Deployment Policy

Metric	Target	Actual
Build Success Rate	≥ 95%	≥ 99.99%
Defect Leakage	≤ 2%	0
Deployment Time	≤ 30 Min	≤ 15 Min



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16. Release & Deployment Policy

- Deployment Window: Approved maintenance hours
- Backup Mandatory Before Deployment
- Rollback Plan Available
- Post Deployment Verification Required

17. Audit & Compliance

- Internal Audit: Quarterly
- External Audit: Yearly