

| VERIFICATION                               |                                |
|--|--------------------------------|
| GATE 2                                     | G3                             |
| <b>DELIVERABLES</b>                        | <b>RESPONSIBILITY</b>          |
| Commissioning Plan                         | Customer Service PVC           |
| Installation Plan                          | Installation Technology        |
| Component Qualification                    | QNPI                           |
| Final VO Test Plan                         | Design Technology              |
| BNR VO Support Plan                        | BNR Design Prime               |
| Field Performance Assessment Plan          | QNPI                           |
| Vintage Product Phase-Out Plan             | Product Line Management        |
| ASIC Development Checklist                 | ASIC Design Prime              |
| 0D PCP Development Checklist               | BNR H/W Design                 |
| 0D Mechanical Development Checklist        | BNR Mechanical Design          |
| 0D Design Package Release                  | BNR/NT                         |
| Engineering Process in Place               | New Product System Engineering |
| ASIC Devices Available                     | ASIC Manufacturing Prime       |
| ASIC Test Results Available                | ASIC Design Prime              |
| 0D Hardware Available                      | NPI                            |
| Approved Test Process in Place             | Test Technology                |
| 0D Test Complete, Results & Evaluation     | BNR H/W Design                 |
| RTO Software Report                        | BNR S/W Design                 |
| Product Safety Assessment                  | QNPI                           |
| Preproduction Evaluation                   | QNPI                           |
| 0D Manufacturability Assessment            | Manufacturing Engineering      |
| Preliminary Customer Documentation         | Documentation Planning         |
| Manufacturing Process Qualification        | QNPI                           |
| Fault Insertion Report                     | BNR                            |
| All Baseline and Critical DCAs Available   | Design Engineering             |
| NIS Test Results                           | FAST                           |
| Reliability Lab Test Results               | QNPI                           |
| 0D Product Integrity Test Results          | BNR PI                         |
| Yield & Production Failure Analysis Report | Test Technology                |
| Appropriate Regulatory Approvals Received  | QNPI                           |
| Design Sustaining Plan                     | BNR Design Prime               |
| Customer Order Received                    | Product Line Management        |
| PRS Assessment                             | NPI                            |
| Design Acceptance Report                   | DesignTechnology               |
| Interim Product Delivery Risk Assessment   | Product Line Management        |

| <b>DELIVERABLES</b>                        | <b>RESPONSIBILITY</b>          |
|--|--------------------------------|
| Final Provisioning Available               | New Product System Engineering |
| Production Evaluation                      | QNPI                           |
| Final Design Documentation                 | Design Engineering             |
| Final Customer Documentation               | Documentation Planning         |
| Appropriate Regulatory Approvals Received  | QNPI                           |
| Final Product Specification Available      | BNR Design Prime               |
| Yield & Production Failure Analysis Report | Test Technology                |
| Application S/W at RTS                     | BNR S/W Design                 |
| VO Test Results Analysis                   | Test Technology                |
| ASICs Available for Volume Manufacturing   | ASIC Manufacturing Prime       |
| Final Component Qualification              | QNPI                           |
| OEM Part Qualification                     | QNPI                           |
| Field Performance Report                   | QNPI                           |
| PRS/CSR Assessment                         | NPI/Technology                 |
| Production Transfer Report                 | N/A                            |
| Design Transfer Status Report              | BNR Design Prime               |
| Standard Cost Available                    | Value Management               |
| Project Cost Update                        | NPI                            |
| Review Previous Gate Action Items          | NPI                            |
| Establish Gate 4 Plan Date                 | NPI                            |

# Pocket Guide for the NPG/Switching NPI Gate Process

(version 2.01)



## List of Abbreviations

|       |   |
|-------|---|
| AD    | Assembly Drawing                          |
| API   | Advanced Provisioning Information         |
| ASIC  | Application Specific Integrated Circuit   |
| BNR   | Bell-Northern Research                    |
| BRW   | Northern Telecom-Bramalea                 |
| CAD   | Computer-Aided Design                     |
| CADES | Computer-Aided Design Engineering System  |
| CAM   | Computer-Aided Manufacture                |
| CF    | Common Features                           |
| CODA  | Computerized Documentation Access         |
| CPA   | Component Placement Agreement             |
| CPM   | Critical Path Method                      |
| CRB   | Change Review Board                       |
| CS    | Circuit Schematic                         |
| CS    | Commercial Specification                  |
| CSD   | Customer Service Division                 |
| CSR   | Customer Service Report                   |
| DA    | Development Agreement                     |
| DC    | Design Close                              |
| DCA   | Design Change Authorization               |
| DCD   | Design Change Document                    |
| DS    | Design Specification                      |
| ECM   | Engineering Change Memo                   |
| ECN   | Engineering Change Notice                 |
| F/W   | Firmware                                  |
| FA    | Functional Agreement                      |
| FAST  | First Application System Test             |
| FC    | Feature Close                             |
| FD    | Functional Description                    |
| GS    | General Specification                     |
| H/W   | Hardware                                  |
| IS    | In-Service                                |
| IS    | Interconnect Schematic                    |
| JIT   | Just in Time                              |
| MA    | Manufacturability Agreement               |
| MA    | Manufacturability Assessment              |
| MRPS  | Material Requirement Planning System      |
| NBO   | New Business Opportunity                  |
| NIS   | Not In-Service                            |
| NPI   | New Product Introduction                  |
| NPIQ  | New Product Introduction - Quality (BRW)  |
| NPM   | New Product Module                        |
| NT    | Northern Telecom                          |
| NTP   | Northern Telecom Practices                |
| OEM   | Original Equipment Manufacturer           |
| ORR   | Office Release Records                    |
| PA    | Physical Agreement                        |
| PAQS  | Provisioning and Quotation System         |
| PCP   | Printed Circuit Pack                      |
| PEP   | Parallel Express Process                  |
| PERT  | Performance Evaluation Review Technique   |
| PI    | Product Integrity                         |
| POP   | Procedure Oriented Practices              |
| PRA   | Product Release Authorization             |
| PRV   | Pre-Release Verification                  |
| PS    | Product Specification                     |
| QA    | Quality Analysis Group                    |
| QNPI  | Quality - New Product Introduction (RTP)  |
| R&D   | Research and Development                  |
| RCR   | Release Control Records                   |
| RTM   | Ready to Manufacture                      |
| RTO   | Ready to Order                            |
| RTP   | Northern Telecom - Research Triangle Park |
| RTS   | Ready to Ship                             |
| S/W   | Software                                  |
| SF    | Specific Features                         |
| SIS   | Strategic Investment Summary              |
| TA    | Testability Agreement                     |
| Telco | Telephone Company                         |
| TMSR  | Tool Made Sample Review                   |
| TSI   | Test Set Instruction                      |
| VO    | Verification Office                       |
| WD    | Writing Diagram                           |
| XS    | Test Specification                        |

## NPI DEVELOPMENT CYCLE

(NPI: New Product Introduction (Version 2.01))  
BRW Manufacturing Site Deliverables

### DEFINITION



| DELIVERABLES                        | RESPONSIBILITY     |
|-------------------------------------|--------------------|
| New Business Opportunity            | Product Management |
| DA Ready for approval               | NPI                |
| Approved Commercial Specification   | Product Management |
| Preliminary Product Specification   | BNR Design Prime   |
| Preliminary Product Management Plan | NPI                |

BNR Gate Deliverables

| DELIVERABLES                             | RESPONSIBILITY         |
|--|------------------------|
| Project Management Plan                  | NPI                    |
| Product Development Plan                 | BNR Design Prime       |
| Market Analysis Report                   | Product Management     |
| Approved Product Specification           | BNR Design Prime       |
| Hardware Design Specifications Available | BNR H/W Design         |
| Product Integrity Plan                   | BNR PI                 |
| ASIC Introduction Plan                   | ASIC Design Prime      |
| Product Requirements Forecast            | NPI                    |
| Regulatory Approval Plan                 | Design Engineering     |
| Quality Plan                             | NPIQ                   |
| Production Process Strategy              | Industrial Engineering |
| Production Test Strategy                 | Test Engineering       |
| Joint Design Acceptance Strategy         | Technology             |
| Feature Roll-Out                         | Product Management     |
| New Product Build Strategy               | NPM                    |
| Customer Service Strategy                | CSD                    |
| Component Acceptance Strategy            | Component Engineering  |
| OEM Acceptance Strategy                  | NT                     |
| Design Control Strategy                  | Design Control         |
| Customer Documentation Strategy          | Customer Documentation |
| Engineering Process Strategy             | Engineering Process    |
| Customer Engineering Strategy            | Customer Engineering   |
| Multiple Site Strategy                   | NPI Alternate Site     |
| Vintage Product Phase-Out Strategy       | Product Management     |
| Product Cost Analysis                    | Value Engineering      |
| Project Cost Update                      | NPI                    |
| Review Previous Gate Action Items        | NPI                    |

## DEVELOPMENT

## VERIFICATION

G1

TE 1

G1A

GATE 1A

G2

GATE 2

| DELIVERABLES                             | RESPONSIBILITY         |
|--|------------------------|
| Product Management Plan                  | NPI                    |
| Product Development Plan                 | BNR Design Prime       |
| Market Analysis Report                   | Product Management     |
| Approved Product Specification           | BNR Design Prime       |
| Hardware Design Specifications Available | BNR H/W Design         |
| Product Integrity Plan                   | BNR PI                 |
| Introduction Plan                        | ASIC Design Prime      |
| Product Requirements Forecast            | NPI                    |
| Regulatory Approval Plan                 | Design Engineering     |
| Quality Plan                             | NPIQ                   |
| Production Process Strategy              | Industrial Engineering |
| Production Test Strategy                 | Test Engineering       |
| Design Acceptance Strategy               | Technology             |
| Market Roll-Out                          | Product Management     |
| Product Build Strategy                   | NPM                    |
| Customer Service Strategy                | CSD                    |
| Component Acceptance Strategy            | Component Engineering  |
| Acceptance Strategy                      | NT                     |
| Design Control Strategy                  | Design Control         |
| Customer Documentation Strategy          | Customer Documentation |
| Engineering Process Strategy             | Engineering Process    |
| Customer Engineering Strategy            | Customer Engineering   |
| Single Site Strategy                     | NPI Alternate Site     |
| End-of-Product Phase-Out Strategy        | Product Management     |
| Cost Analysis                            | Value Engineering      |
| Cost Update                              | NPI                    |
| Review Previous Gate Action Items        | NPI                    |

| DELIVERABLES                           | RESPONSIBILITY            |
|--|---------------------------|
| VO Management Plan                     | VO Management             |
| Customer Service Plan                  | CSD                       |
| Commissioning Strategy                 | Commissioning Engineering |
| Component Acceptance Plan              | Component Engineering     |
| OEM Acceptance Plan                    | NT                        |
| Customer Documentation Plan            | Customer Documentation    |
| Design Control Plan                    | Design Control            |
| Advanced Provisioning Information      | Engineering Process       |
| Production Process Plan                | Industrial Engineering    |
| Production Test Plan                   | Test Engineering          |
| VO and Controlled Intro Sites Selected | Product Management        |
| Joint Design Acceptance Plan           | Technology                |
| Preliminary VO Test Plan               | Technology                |
| Reliability Lab Test Plan              | NPIQ                      |
| Internal Product Requirements          | NPI                       |
| Capital Funds Appropriation Approved   | NPI                       |
| Material Forecast                      | Production Materials      |
| Retrofit Plan                          | CSD                       |
| Design Sustaining Strategy             | BNR Design Prime          |
| New Product Build Plan                 | NPM                       |
| Software Production Plan               | S/W Engineering           |
| ASIC Development Checklist             | ASIC Design Prime         |
| 1W ICP Development Checklist           | BNR H/W Design            |
| 1W Mechanical Development Checklist    | BNR Mechanical Design     |
| 1W Design Package Release              | NT/BNR                    |
| ASIC Samples Available                 | ASIC Prime                |
| 1W Hardware Available                  | NT or BNR                 |
| Diagnostic S/W Available               | BNR S/W Design            |
| 1W Test Complete, Results & Evaluation | BNR H/W Design            |
| 1W Product Integrity Test Results      | BNR PI                    |
| 1W Manufacturability Assessment        | NPM                       |
| Prototype Evaluation                   | QA                        |
| 1W Design Assessment                   | Technology                |
| Product Cost Analysis                  | Value Engineering         |
| H/W RTO/M/S Dates Negotiated           | NPI                       |
| Project Cost Update                    | NPI                       |
| Review Previous Gate Action Items      | NPI                       |

| DELIVERABLES                                 | RESPONSIBILITY            |
|--|---------------------------|
| Commissioning Plan                           | Commissioning Engineering |
| Installation Plan                            | Installation              |
| Component Qualification                      | Component Engineering     |
| Final VO Test Plan                           | Technology                |
| BNR VO Support Plan                          | BNR Design Prime          |
| Field Performance Assessment Plan            | NPIQ                      |
| Vintage Product Phase-Out Plan               | Product Management        |
| ASIC Development Checklist                   | ASIC Design Prime         |
| 0D PCP Development Checklist                 | BNR H/W Design            |
| 0D Mechanical Development Checklist          | BNR Mechanical Design     |
| 0D Design Package Release                    | BNR/NT                    |
| Engineering Process in Place                 | Engineering Process       |
| ASIC Devices Available                       | ASIC Manufacturing Prime  |
| ASIC Test Results Available                  | ASIC Design Prime         |
| 0D Hardware Available                        | NPM                       |
| Approved Test Process in Place               | Test Engineering          |
| 0D Test Complete, Results & Evaluation       | BNR H/W Design            |
| RTO Software Report                          | BNR S/W Design            |
| Product Safety Assessment                    | NPIQ                      |
| Preproduction Evaluation                     | QA                        |
| 0D Manufacturability Assessment              | NPM                       |
| Preliminary Customer Documentation           | Customer Documentation    |
| Manufacturing Process Qualification          | QA                        |
| Fault Insertion Report                       | Technology                |
| All Baseline and Critical DCAs Available     | Design Control            |
| NIS Test Results                             | Technology                |
| Reliability Lab Test Results                 | NPIQ                      |
| 0D Product Integrity Test Results            | BNR PI                    |
| Yield and Production Failure Analysis Report | Test Engineering          |
| Appropriate Regulatory Approvals Received    | Engineering Design        |
| Design Sustaining Plan                       | BNR Design Prime          |
| Customer Order Received                      | Marketing                 |
| PRS Assessment                               | NPI/Tech                  |
| Design Acceptance Report                     | Technology                |
| Interim Product Delivery Risk Assessment     | NPI                       |
| Product Cost Analysis                        | Value Engineering         |
| Project Cost Update                          | NPI                       |
| Review Previous Gate Action Items            | NPI                       |

## DEVELOPMENT

G1A

1A

## VERIFICATION

G2

GATE 2

G3

GATE 3

## TABLES

|                                 |                           |
|---------------------------------|---------------------------|
| Management Plan                 | VO Management             |
| Service Plan                    | CSD                       |
| Commissioning Strategy          | Commissioning Engineering |
| Ent Acceptance Plan             | Component Engineering     |
| ceptance Plan                   | NT                        |
| er Documentation Plan           | Customer Documentation    |
| Control Plan                    | Design Control            |
| ed Provisioning Information     | Engineering Process       |
| on Process Plan                 | Industrial Engineering    |
| on Test Plan                    | Test Engineering          |
| Controlled Intro Sites Selected | Product Management        |
| sign Acceptance Plan            | Technology                |
| ary VO Test Plan                | Technology                |
| ty Lab Test Plan                | NPIQ                      |
| Product Requirements            | NPI                       |
| Funds Appropriation Approved    | NPI                       |
| Forecast                        | Production Materials      |
| Plan                            | CSD                       |
| Sustaining Strategy             | BNR Design Prime          |
| uct Build Plan                  | NPM                       |
| Production Plan                 | S/W Engineering           |
| Development Checklist           | ASIC Design Prime         |
| Development Checklist           | BNR H/W Design            |
| anical Development Checklist    | BNR Mechanical Design     |
| gn Package Release              | NT/BNR                    |
| mples Available                 | ASIC Prime                |
| ware Available                  | NT or BNR                 |
| tic S/W Available               | BNR S/W Design            |
| Complete, Results & Evaluation  | BNR H/W Design            |
| uct Integrity Test Results      | BNR PI                    |
| ufabricability Assessment       | NPM                       |
| ope Evaluation                  | QA                        |
| ign Assessment                  | Technology                |
| Cost Analysis                   | Value Engineering         |
| O/M/S Negotiated                | NPI                       |
| Cost Update                     | NPI                       |
| Previous Gate Action Items      | NPI                       |

## RESPONSIBILITY

|                                 |                           |
|---------------------------------|---------------------------|
| Management Plan                 | VO Management             |
| Service Plan                    | CSD                       |
| Commissioning Strategy          | Commissioning Engineering |
| Ent Acceptance Plan             | Component Engineering     |
| ceptance Plan                   | NT                        |
| er Documentation Plan           | Customer Documentation    |
| Control Plan                    | Design Control            |
| ed Provisioning Information     | Engineering Process       |
| on Process Plan                 | Industrial Engineering    |
| on Test Plan                    | Test Engineering          |
| Controlled Intro Sites Selected | Product Management        |
| sign Acceptance Plan            | Technology                |
| ary VO Test Plan                | Technology                |
| ty Lab Test Plan                | NPIQ                      |
| Product Requirements            | NPI                       |
| Funds Appropriation Approved    | NPI                       |
| Forecast                        | Production Materials      |
| Plan                            | CSD                       |
| Sustaining Strategy             | BNR Design Prime          |
| uct Build Plan                  | NPM                       |
| Production Plan                 | S/W Engineering           |
| Development Checklist           | ASIC Design Prime         |
| Development Checklist           | BNR H/W Design            |
| anical Development Checklist    | BNR Mechanical Design     |
| gn Package Release              | NT/BNR                    |
| mples Available                 | ASIC Prime                |
| ware Available                  | NT or BNR                 |
| tic S/W Available               | BNR S/W Design            |
| Complete, Results & Evaluation  | BNR H/W Design            |
| uct Integrity Test Results      | BNR PI                    |
| ufabricability Assessment       | NPM                       |
| ope Evaluation                  | QA                        |
| ign Assessment                  | Technology                |
| Cost Analysis                   | Value Engineering         |
| O/M/S Negotiated                | NPI                       |
| Cost Update                     | NPI                       |
| Previous Gate Action Items      | NPI                       |

## DELIVERABLES

|   |                           |
|---|---------------------------|
| Commissioning Plan                        | Commissioning Engineering |
| Installation Plan                         | Installation              |
| Component Qualification                   | Component Engineering     |
| Final VO Test Plan                        | Technology                |
| BNR VO Support Plan                       | BNR Design Prime          |
| Field Performance Assessment Plan         | NPIQ                      |
| Vintage Product Phase-Out Plan            | Product Management        |
| ASIC Development Checklist                | ASIC Design Prime         |
| 0D PCP Development Checklist              | BNR H/W Design            |
| 0D Mechanical Development Checklist       | BNR Mechanical Design     |
| 0D Design Package Release                 | BNR/NT                    |
| Engineering Process in Place              | Engineering Process       |
| ASIC Devices Available                    | ASIC Manufacturing Prime  |
| ASIC Test Results Available               | ASIC Design Prime         |
| 0D Hardware Available                     | NPM                       |
| Approved Test Process in Place            | Test Engineering          |
| 0D Test Complete, Results & Evaluation    | BNR H/W Design            |
| RTO Software Report                       | BNR S/W Design            |
| Product Safety Assessment                 | NPIQ                      |
| Preproduction Evaluation                  | QA                        |
| 0D Manufacturability Assessment           | NPM                       |
| Preliminary Customer Documentation        | Customer Documentation    |
| Manufacturing Process Qualification       | QA                        |
| Fault Insertion Report                    | Technology                |
| All Baseline and Critical DCAs Available  | Design Control            |
| NIS Test Results                          | Technology                |
| Reliability Lab Test Results              | NPIQ                      |
| 0D Product Integrity Test Results         | BNR PI                    |
| Yield and Production Failure              | Test Engineering          |
| Analysis Report                           |                           |
| Appropriate Regulatory Approvals Received | Engineering Design        |
| Design Sustaining Plan                    | BNR Design Prime          |
| Customer Order Received                   | Marketing                 |
| PRS Assessment                            | NPI/Tech                  |
| Design Acceptance Report                  | Technology                |
| Interim Product Delivery Risk Assessment  | NPI                       |
| Product Cost Analysis                     | Value Engineering         |
| Project Cost Update                       | NPI                       |
| Review Previous Gate Action Items         | NPI                       |

## RESPONSIBILITY

|   |                           |
|---|---------------------------|
| Commissioning Plan                        | Commissioning Engineering |
| Installation Plan                         | Installation              |
| Component Qualification                   | Component Engineering     |
| Final VO Test Plan                        | Technology                |
| BNR VO Support Plan                       | BNR Design Prime          |
| Field Performance Assessment Plan         | NPIQ                      |
| Vintage Product Phase-Out Plan            | Product Management        |
| ASIC Development Checklist                | ASIC Design Prime         |
| 0D PCP Development Checklist              | BNR H/W Design            |
| 0D Mechanical Development Checklist       | BNR Mechanical Design     |
| 0D Design Package Release                 | BNR/NT                    |
| Engineering Process in Place              | Engineering Process       |
| ASIC Devices Available                    | ASIC Manufacturing Prime  |
| ASIC Test Results Available               | ASIC Design Prime         |
| 0D Hardware Available                     | NPM                       |
| Approved Test Process in Place            | Test Engineering          |
| 0D Test Complete, Results & Evaluation    | BNR H/W Design            |
| RTO Software Report                       | BNR S/W Design            |
| Product Safety Assessment                 | NPIQ                      |
| Preproduction Evaluation                  | QA                        |
| 0D Manufacturability Assessment           | NPM                       |
| Preliminary Customer Documentation        | Customer Documentation    |
| Manufacturing Process Qualification       | QA                        |
| Fault Insertion Report                    | Technology                |
| All Baseline and Critical DCAs Available  | Design Control            |
| NIS Test Results                          | Technology                |
| Reliability Lab Test Results              | NPIQ                      |
| 0D Product Integrity Test Results         | BNR PI                    |
| Yield and Production Failure              | Test Engineering          |
| Analysis Report                           |                           |
| Appropriate Regulatory Approvals Received | Engineering Design        |
| Design Sustaining Plan                    | BNR Design Prime          |
| Customer Order Received                   | Marketing                 |
| PRS Assessment                            | NPI/Tech                  |
| Design Acceptance Report                  | Technology                |
| Interim Product Delivery Risk Assessment  | NPI                       |
| Product Cost Analysis                     | Value Engineering         |
| Project Cost Update                       | NPI                       |
| Review Previous Gate Action Items         | NPI                       |

## DELIVERABLES

|  |                        |
|--|------------------------|
| Final Provisioning Available                 | Engineering Process    |
| Production Evaluation                        | QA                     |
| Final Design Documentation                   | Design Control         |
| Final Customer Documentation                 | Customer Documentation |
| Appropriate Regulatory Approvals Received    | Design Engineering     |
| Final Product Specification Available        | BNR Design Prime       |
| Yield and Production Failure Analysis Report | Test Engineering       |
| Application S/W at RTS                       | BNR S/W Design         |
| VO Test Results Analysis                     | Technology             |
| ASICS Available for Volume Manufacturing     | ASIC Manufacturing     |
| Final Component Qualification                | Component Engineering  |
| OEM Part Qualification                       | NT                     |
| Field Performance Report                     | NPIQ                   |
| PRS/CSR Assessment                           | NPI/Technology         |
| Production Transfer Report                   | NPM                    |
| Design Transfer Status Report                | BNR Design Prime       |
| Standard Cost Available                      | Value Engineering      |
| Project Cost Update                          | NPI                    |
| Review Previous Gate Action Items            | NPI                    |
| Establish Gate 4 Plan Date                   | NPIQ/NPI               |

## RESPONSIBILITY

|  |                        |
|--|------------------------|
| Final Provisioning Available                 | Engineering Process    |
| Production Evaluation                        | QA                     |
| Final Design Documentation                   | Design Control         |
| Final Customer Documentation                 | Customer Documentation |
| Appropriate Regulatory Approvals Received    | Design Engineering     |
| Final Product Specification Available        | BNR Design Prime       |
| Yield and Production Failure Analysis Report | Test Engineering       |
| Application S/W at RTS                       | BNR S/W Design         |
| VO Test Results Analysis                     | Technology             |
| ASICS Available for Volume Manufacturing     | ASIC Manufacturing     |
| Final Component Qualification                | Component Engineering  |
| OEM Part Qualification                       | NT                     |
| Field Performance Report                     | NPIQ                   |
| PRS/CSR Assessment                           | NPI/Technology         |
| Production Transfer Report                   | NPM                    |
| Design Transfer Status Report                | BNR Design Prime       |
| Standard Cost Available                      | Value Engineering      |
| Project Cost Update                          | NPI                    |
| Review Previous Gate Action Items            | NPI                    |
| Establish Gate 4 Plan Date                   | NPIQ/NPI               |

# NPI DEVELOPMENT CYCLE

(NPI: New Product Introduction (Version 2.01))  
**RTP Manufacturing Site Deliverables**

**DEFINITION**

**DEVELOPMENT**

**G0A**

**GATE 0A**

| DELIVERABLES                        | RESPONSIBILITY          |
|-------------------------------------|-------------------------|
| New Business Opportunity            | Product Line Management |
| DA Ready for approval               | NPI                     |
| Approved Commercial Specification   | Product Line Management |
| Preliminary Product Specification   | BNR Design Prime        |
| Preliminary Product Management Plan | NPI                     |

BNR Gate Deliverables

**G1**

**GATE 1**

| DELIVERABLES                             | RESPONSIBILITY                 |
|--|--------------------------------|
| Project Management Plan                  | NPI                            |
| Product Development Plan                 | BNR Design Prime               |
| Market Analysis Report                   | Product Line Management        |
| Approved Product Specification           | BNR Design Prime               |
| Hardware Design Specifications Available | BNR H/W Design                 |
| Product Integrity Plan                   | BNR PI                         |
| ASIC Introduction Plan                   | ASIC Design Prime              |
| Product Requirements Forecast            | NPI                            |
| Regulatory Approval Plan                 | QNPI                           |
| Quality Plan                             | QNPI                           |
| Production Process Strategy              | Manufacturing Engineering      |
| Production Test Strategy                 | Test Technology                |
| Joint Design Acceptance Strategy         | Design Technology/BNR          |
| Feature Roll-Out                         | Product Line Management        |
| New Product Build Strategy               | NPI                            |
| Customer Service Strategy                | Customer Service PVC           |
| Component Acceptance Strategy            | BNR                            |
| OEM Acceptance Strategy                  | QNPI                           |
| Design Control Strategy                  | Design Engineering             |
| Customer Documentation Strategy          | Documentation Planning         |
| Engineering Process Strategy             | New Product System Engineering |
| Customer Engineering Strategy            | New Product System Engineering |
| Multiple Site Strategy                   | NPI Alternate Site             |
| Vintage Product Phase-Out Strategy       | Product Line Management        |
| Product Cost Analysis                    | Value Management               |
| Project Cost Update                      | NPI                            |
| Review Previous Gate Action Items        | NPI                            |

**G1A**

**GATE 1A**

| DELIVERABLES                           | RESPONSIBILITY                 |
|--|--------------------------------|
| VO Management Plan                     | Product Management             |
| Customer Service Plan                  | Customer Service PVC           |
| Commissioning Strategy                 | Customer Service PVC           |
| Component Acceptance Plan              | BNR                            |
| OEM Acceptance Plan                    | QNPI                           |
| Customer Documentation Plan            | Documentation Planning         |
| Design Control Plan                    | Design Engineering             |
| Advanced Provisioning Information      | New Product System Engineering |
| Production Process Plan                | Manufacturing Engineering      |
| Production Test Plan                   | Test Technology                |
| VO and Controlled Intro Sites Selected | Product Line Management        |
| Joint Design Acceptance Plan           | Design Technology              |
| Preliminary VO Test Plan               | Design Technology              |
| Reliability Lab Test Plan              | QNPI                           |
| Internal Product Requirements          | NPI                            |
| Capital Funds Appropriation Approved   | NPI                            |
| Material Forecast                      | Production Materials           |
| Retrofit Plan                          | Product Line Management        |
| Design Sustaining Strategy             | BNR Design Prime               |
| New Product Build Plan                 | NPI                            |
| Software Production Plan               | BCS Engineering                |
| ASIC Development Checklist             | ASIC Design Prime              |
| 1W PCP Development Checklist           | BNR H/W Design                 |
| 1W Mechanical Development Checklist    | BNR Mechanical Design          |
| 1W Design Package Release              | NT/BNR                         |
| ASIC Samples Available                 | ASIC Prime                     |
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| 1W Test Complete, Results & Evaluation | BNR H/W Design                 |
| 1W Product Integrity Test Results      | BNR PI                         |
| 1W Manufacturability Assessment        | Manufacturing Engineering      |
| Prototype Evaluation                   | QNPI                           |
| 1W Design Assessment                   | Design Technology              |
| Product Cost Analysis                  | Value Management               |
| H/W RTO/M/S Dates Negotiated           | NPI                            |
| Project Cost Update                    | NPI                            |
| Review Previous Gate Action Items      | NPI                            |