

# Ontario Power Generation Nuclear Report Card

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*Darlington Nuclear*  
*Second Quarter 2004*



A Report Card is also available for Pickering Nuclear.  
Report Cards are issued on a quarterly basis.

**ONTARIOPOWER**  
GENERATION

# Why a Report Card?

We issue our Nuclear report card as part of keeping our promise to operate in an open manner — in this case by providing key statistics on how well our nuclear stations are working.

The measurements chosen for use in the report card represent only a few of those we use to assess our performance.

The report card also compares our performance with industry benchmarks which are based on industry best practices or performance of top performing nuclear utilities. To learn more about our performance, please visit the Ontario Power Generation website at [www.opg.com](http://www.opg.com) or call 905-623-7122.

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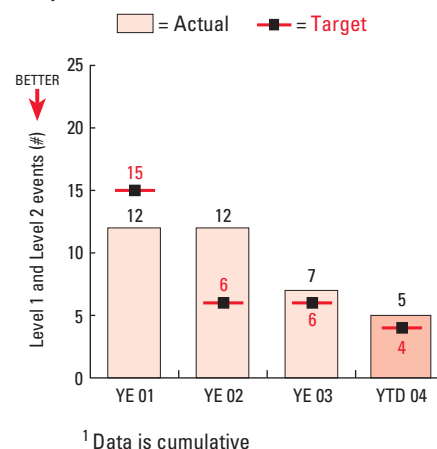


## Public Safety

One gauge of how safe our stations are is the number of events that cause some reduction in the margin of public safety. Such events, in themselves, don't necessarily pose a danger to the public, but they do put pressure on the station's safety systems and therefore temporarily reduce the *margin* of safety.

This report card lists the number of Level 1 and 2 Reportable Events. A Level 1 Event is defined as highly significant. A Level 2 Event is significant.

## Reportable Events <sup>1</sup>



### Reportable Events Summary:

As of the end of the second quarter 2004, there have been five Level 1 and 2 Reportable Events at Darlington versus the year-to-date target of four. Three of these occurred during the second quarter and corrective actions were taken.

Another significant measure of safety system performance is the "Reactor Trip Rate" — the number of unplanned reactor shutdowns (per 7,000 hours of operation) triggered by automatic safety systems. Reactor trips indicate potential problems that need to be addressed — but they also demonstrate that safety systems are working as they should to catch these potential problems.

### Reactor Trip Rate Summary:

As of the end of the second quarter 2004, the Reactor Trip Rate measured 0.0, which is better than the target and the industry benchmark of one trip per 7,000 hours of operation per year.



## Radiation Exposure to the Public

| Dose To Public <sup>1</sup> |                         |                         |                    |
|-----------------------------|-------------------------|-------------------------|--------------------|
|                             | Q1 2004<br>Actual (µSv) | Q1 2004<br>Target (µSv) | Performance        |
| Darlington                  | 0.4                     | 1.9                     | Better than target |

<sup>1</sup> Data is cumulative

This figure is a realistic estimate of the radiation dose for people living near the station based on their actual lifestyle characteristics and food consumption pattern. The dose is measured in microsieverts (µSv), an international unit of dose. By way of comparison, the average Canadian receives about 1,770 microsieverts a year from natural sources such as cosmic rays and radon in the soil.

### Dose to Public Summary:

The definition for Dose to Public was revised this month to incorporate a change to the reporting frequency from four weeks after the end of each calendar quarter to thirteen weeks. This delay in reporting is caused by the need to conduct more sampling and laboratory analysis as a result of changes to the dose calculation standard, and the recent upgrade and expansion of the environmental monitoring program. As a result, there will be a lag of one quarter in reporting. The results displayed above are for Q1. Q2 results will be available in the Q3 Public Report Card.

One important note. You'll see that on occasion we don't meet the targets we've set for ourselves. This doesn't indicate an unsafe situation. Our performance targets are set well within the range of safe operation. Any unsafe condition — or the potential of one — leads to the immediate shutdown of a reactor.

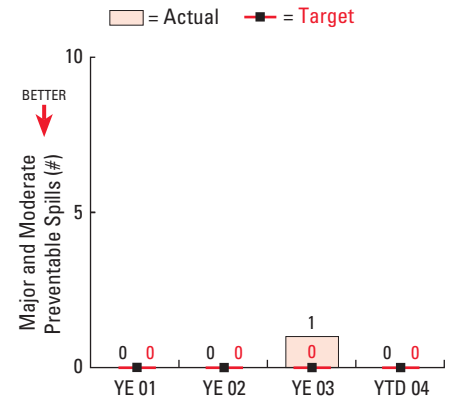
We're working hard to make our nuclear generating stations world performance leaders once again. We'll keep you informed of our progress through this report card.



## Environmental Performance

The measure used to gauge environmental performance is the number of spills of chemicals or other substances that have taken place at the stations. These figures indicate "major and moderate preventable spills" reportable to the Ontario Ministry of the Environment.

### Preventable Spills <sup>1</sup>



<sup>1</sup> Data is cumulative

#### Preventable Spills Summary:

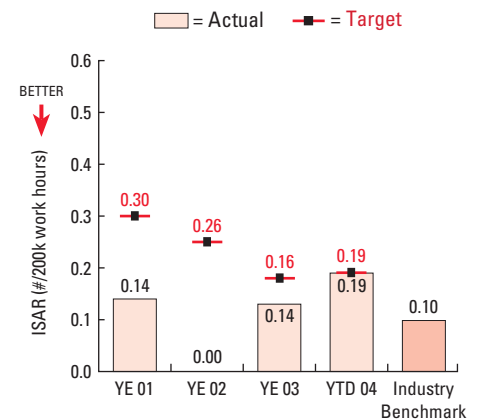
As of the end of the second quarter 2004, there have been zero Category A and B Spills at Darlington which achieves the target.



## Employee Safety

One of the most widely accepted measures of employee safety is the Industrial Safety Accident Rate — the number of employee accidents per 200,000 hours worked that result in lost time, injuries that restrict work or fatalities.

### Industrial Safety Accident Rate



#### Industrial Safety Accident Rate Summary:

The Darlington ISAR of 0.19 as of the end of June is meeting the target of 0.19 employee accidents per 200,000 hours worked.

Another useful measure of employee safety is the Accident Severity Rate — the number of days lost to injuries per 200,000 hours worked.

#### Accident Severity Rate Summary:

The Accident Severity Rate of 0.3 is better than the year-to-date target of 2.51.





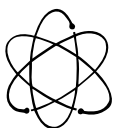
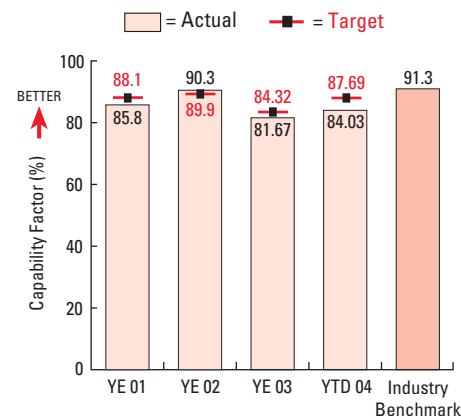
## Electricity Production

One measure of how well the station is doing at producing electricity is the “Capability Factor.” This figure represents the amount of electricity the station is actually capable of producing per quarter as a percentage of its potential capacity — in other words, its capacity if all reactors and related systems were operating with no down-time at all.

### Capability Factor Summary:

The Capability Factor of 84.03% was worse than the target of 87.69%. This was largely the result of unplanned maintenance outages.

### Capability Factor



## Nuclear Performance Index

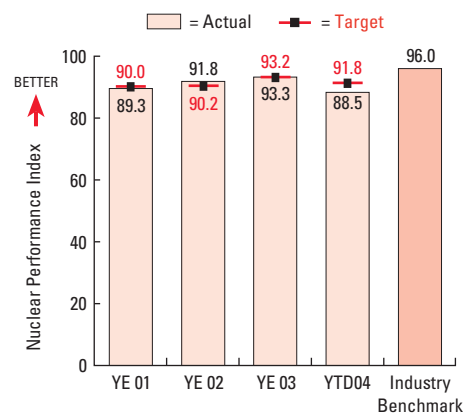
This index, reported on a quarterly basis, is measured out of 100 and provides an overview of performance based on nine key indicators that cover a number of areas, including reliability and production. The index is used by the World Association of Nuclear Operators (WANO) as one measure of a nuclear plant's performance.

**Note:** The Nuclear Performance Index (NPI) methodology has been revised for 2004 reporting. The Industrial Safety Accident Rate (ISAR) is no longer included in the index calculation. The 5% weighting for ISAR has been re-assigned to other indicators. This change was made by the World Association of Nuclear Operators (WANO) and applies to all operators.

### Nuclear Performance Index Summary:

The Q2 2004 Nuclear Performance Index (NPI) is 88.5, which is worse than the target of 91.8. This quarter's NPI represents an increase of 2.2 points from Q1 2004.

### Nuclear Performance Index



## Glossary

**Index:** A collection of statistics that, taken together, provide a useful standard or measurement.

**WANO:** World Association of Nuclear Operators — an international organization created to maximize the safety and reliability of the operation of nuclear power plants worldwide.

**YE:** Year-end

**YTD:** Year-to-date

Ontario Power Generation is an Ontario-based company, whose principal business is the generation and sale of electricity to customers in Ontario and to neighbouring markets. OPG's goal is to be a premier North American company focused on low-cost power generation and wholesale energy sales while operating in a safe, open and environmentally responsible manner. For more information, please call 905-623-7122 or visit our website at [www.opg.com](http://www.opg.com)