

<b>Chemical Plant Operator</b>		<b>New South Wales (NSW)</b>
ASCO Code: 4987-11	September 2006	
Labour market rating	No shortage	
<b>Comment</b>		

### **Occupational demand**

Employment in the chemical and pharmaceutical manufacturing industry in NSW has been in decline over the last decade due to strong competition from imports and the movement of some production facilities to lower-cost centres interstate and overseas. The consensus of employer and industry representatives contacted for this report was that demand for chemical plant operators is currently subdued.

### **Occupational supply**

While an Australian Apprenticeship exists in process plant operation, most workers who undertake this training are existing workers rather than new entrants to the industry. Employers surveyed for this report stated that entry to the occupation is usually through on-the-job training and new entrants are recruited as they are needed. The consensus of employers was that due to declining demand and low wastage from the occupation, entry-level recruitment had been limited in recent years. Immigration is also a minor source of supply to the occupation. Data from the Department of Immigration and Citizenship show that net overseas immigration of chemical, petroleum and gas plant operators to NSW averaged only three persons a year over the past five years.

The consensus of employers was that wastage and turnover from the occupation is very low as wages and working conditions are above the average for occupations requiring a similar skill level. Several employers, however, suggested the age profile of the occupation is older than average and that wastage is likely to increase significantly over the medium term.

### **Employer and industry comments/current labour market**

All surveyed employers who had recently advertised vacancies for this occupation were successful in filling them. The majority of employers filled their vacancies with ease, in some cases receiving applications from chemists, chemical engineers and pharmacists with Australian or overseas qualifications who were wishing to break into the industry. Applicants at this level, however, were generally considered to be overqualified for plant operator positions. In most cases employers were not necessarily seeking persons with relevant formal qualifications or experience as chemical plant operators but rather applicants with an aptitude for the work and experience in a similar field, such as tradespeople or production workers from other industries. A minority of employers stated that they filled their vacancies with some difficulty, eventually recruiting workers from allied industries who required further on-the-job training. Other employers, however, reported they frequently received unsolicited applications from experienced chemical plant operators canvassing for work.

### **Labour market outlook**

The consensus of employers was that demand for this occupation would continue to be constrained by import competition and the trend towards increasing productivity in the industry. A number of medium-to-large employers surveyed were actively engaged in workforce planning to deal with the expected increase in retirements from this occupation over the medium term. No significant shortage of chemical plant operators is expected in 2007.

<b>Chemical Plant Operator</b>	<b>Victoria (VIC)</b>
<b>ASCO Code: 4987-11</b>	September 2006
<b>Labour market rating</b>	No Shortage

### **Occupational demand**

Demand for chemical plant operators is determined by the general level economic activity, regulatory restrictions on access to overseas markets, foreign trade agreements, the strength of the Australian dollar and international commodity prices. The price of basic raw materials can vary significantly. The price of selenium has risen, restricting access for local chemical manufacturers who rely on the material as a raw ingredient. The industry is split into three broad sectors – production of chemicals from natural raw materials, production of pharmaceuticals using primary chemicals as the input, and production of vaccines and biological agents, which can involve highly toxic processes and by-products.

### **Occupational supply**

The main trade level qualification operators undertake is the Certificate III in Process Plant Operations which is part of the Chemical, Hydrocarbons and Oil Refining Training Package. Companies commonly contract Registered Training Organisations to come to their workplace to deliver training on-site. Some employers seek operators with a trade background, commonly electrician, electronic instrument maker, fitter or diesel mechanic.

### **Employer and industry comments/current labour market**

The skill level required by employers varies considerably depending upon the complexity of the chemical process being controlled. At the high end of the spectrum, operators at containment facilities producing hazardous biological agents and vaccines typically require a science degree. Conversely, operators in some pharmaceutical plants are semi-skilled as they supervise processes that only involve mixing and pelletising dry ingredients. There has been some down-skilling in the area as chemical plants increasingly utilise Programmed Logic Control and Supervisory Control and Data Acquisition to control and monitor the manufacturing process. These plants typically have computer based fault diagnosis software, and operators call in trade qualified maintenance staff when a fault is identified.

Employers seeking trade level skills generally accept that they will be lucky to find the exact skill set they require for a vacancy, and aim to recruit trade qualified applicants with experience in production environments. They then provide on-the-job training and contract Registered Training Organisations to deliver onsite training from the Chemicals, Hydrocarbons and Oil Refining Training Package.

### **Labour market outlook**

The demand determinants and supply characteristics of the occupation are fairly stable and most employers should be able to fill vacancies in the short term.

<b>Chemical Plant Operator</b>	<b>Queensland</b>
<b>ASCO Code:</b> 4987-11	September 2006
<b>Labour market rating</b>	No shortage
<b>Comment:</b>	

### **Occupational demand**

Chemical plant operators observe and control the operation of continuous or batch processing chemical plants to produce a wide range of products. Demand for workers comes from the pharmaceutical, petrochemical, plastics, paint, explosives, industrial gases, fertiliser, pesticide, cosmetics, waste treatment, construction materials and mineral processing industries. The level of demand depends on the levels of activity and profit within these sectors, the volume of similar products imported from other countries, and government controls on chemical manufacturing. Demand for chemical plant operators has grown in recent years due to strong interest and investment in the mining and mineral processing industries, and to solid capital investment across most of the manufacturing sector.

### **Occupational supply**

Historically, most Queensland employers required little more than a Year 10 education when recruiting new chemical plant operators, but in recent years some employers have been seeking applicants with experience and/or tertiary qualifications. There is an established three year traineeship for this occupation in Queensland, based on a Certificate III in Process Plant Operations. This traineeship has been offered since 2001 and its formal training component is currently available through two registered training organisations located in Brisbane and Rockhampton. Data from the Queensland Department of Employment and Training show new commencements in the first four years of the traineeship totalled 18 while the number of completions during that time totalled five. In 2005, commencements increased significantly, especially in Central Queensland where well over 90 per cent of the State's registered trainees are located.

### **Employer and industry comments/current labour market**

In this year's survey of advertised vacancies for chemical plant operators in Queensland, 70 per cent were filled within four weeks of advertising. Those employers seeking skilled and experienced applicants received a large number of responses and had a 95 per cent filling rate. In all these cases applicants were already employed. Most of these employers were from the mineral resources sector, which frequently offers much higher remuneration than other areas of general chemical manufacturing, and it is likely that this accounts for their easy recruitment experiences. The majority of employers and vacancies, though, were calling for applicants with no more than a dependable work ethic and the potential to become a competent operator. These employers wanted to provide successful applicants with 'on the job' training specific to company standards. These vacancies attracted low numbers of applicants or, in some cases, no applicants, and overall one in four applicants was considered to be suitable.

### **Labour market outlook**

Demand for chemical plant operators in Queensland is expected to increase in line with future investment and growth in the State's manufacturing sector, and with ongoing activity in the mineral resources sector. Accredited training for this occupation has not traditionally been in demand by Queensland employers but in recent years formal qualifications have been increasingly sought in some industries. The labour market for skilled and experienced chemical plant operators may tighten as more employers seek qualified applicants but, at this time, chemical plant operators are not considered to be in shortage and are unlikely to move into shortage over the next year.

<b>Chemical Plant Operator</b>		<b>South Australia</b>
<b>ASCO Code:</b> 4987-11	September 2006	
<b>Labour market rating</b>	No Shortage	
<b>Comment</b>		

### **Occupational demand**

Australian Bureau of Statistics Census data show that employment in this occupation grew from around 110 persons in 1996 to around 130 persons in 2001. Almost all chemical plant operators work in the manufacturing industry. Anecdotal information suggests that employment opportunities are limited due to the small number of chemical plants currently operating in South Australia. DEWR's count of skilled vacancies indicates that demand for chemical plant operators has remained low for several years.

### **Occupational supply**

There is no formal training for this occupation in South Australia. It is therefore assumed that employment growth and/or replacement demand has been satisfied via other means, such as on-the-job training or skilled migration, or a combination of the two.

### **Employer and industry comments/current labour market**

Very few recently advertised vacancies were available for follow-up for this report. Of the few employers who had advertised, none were seeking trade qualified chemical plant operators nor was there an expectation that applicants would have extensive previous experience. Employers acknowledged that the labour market for chemical plant operators is small and consequently there are few people to choose from when vacancies arise. Some employers were unable to identify whether their positions would be filled as, at the time of contact, selection processes were incomplete, but other employers had successfully recruited suitable candidates.

In addition to the above contacts, several firms were cold-canvassed for information regarding the current labour market for chemical plant operators. None of the firms contacted operated chemical manufacturing facilities in South Australia, and therefore they were unable to provide relevant feedback on current labour market conditions for plant operators. Nonetheless, the feedback from these contacts indicated that SA has only a small number of chemical production facilities relative to other parts of Australia, and this supports the low levels of employment and demand for chemical plant operators observed in recent years.

### **Labour market outlook**

There are no indications that demand for chemical plant operators will increase in the short-term. Moreover, it appears that there is little demand for trade qualified workers, as evidenced by the lack of apprenticeship commencements and completions during the previous ten years. It therefore appears likely that occupational supply will continue to be met via informal means, and this should be sufficient to satisfy replacement demand over the next twelve months.

<b>Chemical Plant Operator</b>	<b>Western Australia (WA)</b>
ASCO Code: 4987-11	September 2006
<b>Labour market rating:</b>	No Shortage
<b>Comment</b>	

### **Occupational demand**

State Government Budget papers for 2006-07 show that the WA economy grew by 4.8 per cent in 2005-06, almost twice the 2.7 per cent growth recorded in 2004-05. Further growth of 5.3 per cent is forecast for 2006-07. The Department of Industry and Resources has released preliminary statistics showing that the value of WA petroleum and mineral resources in 2005-06 increased by 29 per cent to \$43.2 billion. The overall rise in value of sales for 2005-06 is mainly attributable to the significant increases in the value of the petroleum and iron ore sectors (23 per cent and 56 per cent respectively), accounting for almost two-thirds of the total value of production.

Mineral exploration in WA decreased by 2.2 per whilst petroleum exploration rose by 12.7 per cent in 2005-06 compared with the previous year.

This occupation is too small for quarterly Australian Bureau of Statistics' Labour Force Survey figures to be reliable, however, the number of chemical plant operators recorded in WA increased by an annual average of 12.6 per cent to 484 over the five years to the 2001 Census. Industry data and industry and employer contacts suggest that this number has increased significantly.

### **Occupational supply**

The 2001 Census indicated that just over one quarter of chemical plant operators (26.2 per cent) held Certificate III or IV qualifications, however, this proportion has and is likely to continue to increase. Relevant local training is the Certificate II or III in Process Plant Operations, or the Certificate II or III in Metalliferous Mining Operations (Processing). The number of completions from these courses more than doubled to 70 persons in 2005, and increased commencements (including 151 persons in 2005), suggest that qualified supply should increase even more strongly in the next few years. The Process Plant Operations courses may also supply petroleum and gas plant operators. There is considerable crossover between the streams of process manufacturing.

### **Employer and industry comments/current labour market**

Nearly all positions advertised in the last six months by companies contacted were filled (99 per cent). Whilst one employer reported over 100 applicants for their vacancies, for most positions there were 15 to 30 applicants. The proportion of suitable applicants was low, but on average there were seven suitable applicants per vacancy. Because there are so many applicants for the available positions, employers generally seek candidates with either direct processing experience and/or a mechanical, instrument or electrical trade background. The WA Labour Economics Office has not previously assessed this occupation. A number of employers indicated that they would usually have expected more applicants, however they were being attracted to the more highly paying oil and gas industry. Turnover has also increased as a consequence.

Increasingly employers require chemical plant operators to progress through an Australian Apprenticeship. The trainee positions attract hundreds of applicants. Successful trainees are generally those who have a good work ethic and a stable work history. Initially trainees are employed by a registered training organisation with practical experience gained on-site.

### **Labour market outlook**

Although the demand for chemical plant operators is likely to continue to increase with the growth of mineral production and associated chemical facilities, it is likely that potential supply will continue to exceed this demand. There is expected to be no shortage for at least the next six months.

<b>Chemical Plant Operator</b>		<b>Tasmania</b>
<b>ASCO Code:</b> 4987-11	September 2006	
<b>Labour market rating</b>	Balance	
<b>Comment</b>		

### **Occupational demand**

Census data indicates that in 2001 there were a total of 28 chemical plant operators employed in Tasmania, with the vast majority employed in the medicinal and pharmaceutical product manufacturing industry. There is only one employer in Tasmania of any significance in this particular industry, and that employer estimates that they employ around 55 operators throughout the factory at present. Not all of these people would have been classified as chemical plant operators by the Australian Bureau of Statistics at the 2001 Census, however.

### **Occupational supply**

There is no formal supply to the occupation, and new recruits are put through a period of on the job training which, if successful, culminates in the award of a Certificate II level qualification. Potential leading hands are selected from existing employees generally, who then are put through a Certificate III level qualification.

### **Employer and industry comments/current labour market**

The only employer of chemical plant operators in Tasmania of any size, advised that they recruit on the basis of personal qualities and potential to complete the Certificate II course, rather than any pre-existing skills or qualifications. Literacy and numeracy skills, along with a demonstrated mechanical aptitude are some of the qualities they look for. The employer advised that they have no trouble attracting suitable applicants for these jobs. They also advised they have a good relationship with the local high school which also enables them to attract suitable applicants.

### **Labour market outlook**

Given that the majority of chemical plant operators in Tasmania are employed by one employer, and they are primarily entry level positions with subsequent on the job training, recruitment difficulties or shortages are not expected for at least the next 12 months.